WEEK OIL MOMENT YOU

THIS page, a new feature of NATIONAL PETROLEUM NEWS, is in answer to two suggestions that have come from readers.

The first was for a page where the reader could secure, almost in a glance, the gist of what was going on in the oil industry during the week under review.

The second was for a table of contents page in a more convenient place for the reader to find.

In the accompanying columns on this page, a table of contents and index are combined. Each article in this issue reporting news developments in any phase of the industry is abstracted in a few words and its page number given. Perusal of these columns will give the reader, in a moment's time, the gist of what is going on in the oil industry, even to the trend of the markets.

The position of this page, immediately preceding the first article in each issue, has been selected as best meeting the convenience of the reader.

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Gist of the News in 60 Seconds

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(*Underwood & Underwood*)

The foot that scuffs at structures now flicks the ice on Lake Placid. C. H. Wegemann, New York, chief geologist for the Pan American Petroleum & Transport Co., skating with his daughter at the Lake Placid Club, in New York

NATIONAL PETROLEUM NEWS

State Cannot Fix Gasoline Prices, U. S. Supreme Court Rules

By V. B. Guthrie
N. P. N. MANAGING EDITOR

SELLING gasoline is a straight merchandising business, just like selling any other of the thousands of commodities the public uses.

The state cannot fix the price at which it shall be sold to the public.

Nor can the state set up a department and force oil companies to turn over to it their marketing costs, for the purpose of aiding the state in fixing the price of gasoline.

The U. S. Supreme Court ruled to this effect Jan. 2 in its review of the Tennessee gasoline price fixing statute, which was passed in 1927.

This is the first case in which the high court has been called on to define directly the extent to which the selling of gasoline is affected with a public interest and therefore subject to supervision of the state, or any other public authority; although it has ruled on this same principle with regard to other commodities. These previous decisions were the basis of the court's ruling in the Tennessee case.

"The legislature is without power to authorize agencies of the state to fix prices at which gasoline may be sold in the state, because the effect will be to deprive the vendors of such gasoline of their property without due process of law, in violation of the fourteenth amendment to the constitution," said the court in its decision, which was concurred in by Justices Brandeis and Stone, with Justice Holmes dissenting.

The case came before the U. S. Supreme Court on appeal by the state authorities in Tennessee from decisions in lower courts which granted the Standard Oil Co. of Louisiana and The Texas Co. injunctions to prevent the provisions of the Tennessee statute from becoming effective.

"It is settled by recent decisions of this court that a state legislature is without constitutional power to fix prices at which commodities may be sold, services rendered, or property used, unless the business or property involved is 'affected with a public interest'," the decision continues.

"Nothing is gained by reiterating the statement that the phrase is indefinite. By repeated decisions of this court, beginning with Munn v. Illinois, 94 U. S. 113, that phrase, however it may be characterized, has become the established test by which the legislative power to fix prices of commodities, use of property, or services must be measured.

"As applied in particular instances, its meaning may be considered both from an affirmative and a negative point of view. Affirmatively, it means that a business, or property, in order to be affected with a public interest, must be such, or be so employed, as to justify the conclusion that it has been devoted to a public use and its use thereby, in effect granted the public.

"Negatively, it does not mean that a business is affected with a public interest merely because it is large or because the public are warranted in having a feeling of concern in respect of its maintenance.

The Court's Definition Of 'A Public Interest'

THE accompanying statement as to what gives a business "a public interest" is to be found in the decision of the U. S. Supreme Court in the case of the Wolff Packing Co. versus Court of Industrial Relations. Here the court held invalid the wage fixing provision of the compulsory arbitrary statute of Kansas as applied to a meat packing establishment: This case is cited in the court's decision in the Tennessee case.

"It is manifest * * * that the mere declaration by a legislature that a business is affected with public interest is not conclusive on the question whether its attempted regulation on that ground is justified.

"It has never been supposed, since the adoption of the Constitution, that the business of the butcher, or the baker, or the tailor, the wood chopper, the mining operator, or the miner was clothed with such public interest that the price of his product or his wages could be fixed by state regulation.

"An ordinary producer, manufacturer, or shopkeeper, may sell or not sell, as he likes; and, while this feature does not necessarily exclude businesses from the class clothed with a public interest, it usually distinguishes private from quasi-public occupations.

"In nearly all businesses included under the third head above, the thing which gave the public interest was the indispensable nature of the service, and the exorbitant charges and arbitrary control to which the public might be subjected without regulation."

"IN SUPPORT of the act under review it is urged that gasoline is of widespread use; that enormous quantities of it are sold in the state of Tennessee; and that it has become necessary and indispensable in carrying on commercial and other activities within the state. But we are here concerned with the character of the business, not with its size or the extent to which the commodity is used.

"Gasoline is one of the ordinary commodities of trade, differing, so far as the question here is affected, in no essential respect from a great variety of other articles commonly bought and sold by merchants and private dealers in the country.

"There is nothing in the point that the act in question may be justified on the ground that the sale of gasoline in Tennessee is monopolized by appellees, or by either of them, because, objections to the materiality of the contention aside, an inspection of the pleadings and of the affidavits

submitted to the lower court discloses an utter failure to show the existence of such monopoly.

"Nor need we stop to consider the further contention that appellees, being foreign corporations, may not carry on their business within the state except by complying with the conditions prescribed by the state. While that is the general rule, a well-settled limitation upon it is that the state may not impose conditions which require the relinquishment of rights guaranteed by the Federal Constitution."

The Supreme Court also ruled out as unconstitutional other provisions of the Tennessee statute than the price fixing clause, on the ground that they were merely aids to the effective execution of the price-fixing clause. These other provisions set up a Division of Motors and Motor Fuels to collect data regarding costs of refining and selling gasoline which would be necessary in determining prices at which gasoline should be sold to the public; made it unlawful for any company to engage in gasoline selling without a state permit, and forbade the granting of rebates below open prices to any class of trade and so on.

"We must hold that the object of the statute under review was to accomplish the single general purpose which we have stated (the fixing of the price of gasoline to the public) and, that purpose failing for want of constitutional power to effect it, the remaining portions of the act, serving merely to facilitate or contribute to the consummation of the purpose, must likewise fall," the decision concludes.

THE statute in Tennessee was passed in 1927 during the administration of Governor Peay. It was introduced as a bill by A. D. McKnight, of the Consumers Supply Co., Murfreesboro, majority leader in the state senate at that time. Mr. McKnight himself drew up a bill which was intended to protect Independent jobbers from price wars among the large companies. He had the support of the Independent marketers in the state. Governor Peay and his attorney general had framed a straight price fixing bill. The bill which was finally passed was a compromise, but it still had the support of the Independent oil men.

It is necessary to go back a year or so prior to 1927 to review occurrences in the state which brought about a state of mind among the Independents which led them to support a measure putting their individual businesses under the control of the state. Competition among the big companies had brought about a situation where the margin between the tank car and the tank wagon price of gasoline was not enough to allow the Independent marketer a profit. The Independents finally brought suit against the major distributing companies, charging they had conspired to drive out the smaller competition. A temporary injunction was granted the small companies by a state court, but later an agreement was reached whereby something like normal margins were set up between the tank car delivered price of gasoline and the tank wagon price and this litigation was dismissed. Many Independents were still of the opinion, however, that the state would have to fix prices for their own protection.

Principal provisions of the Tennessee price-fixing act, which was passed as an emergency measure, were:

Creation of a division of motors and motor fuels in the state department of finance and taxation to have the power to license both wholesale and retail gasoline dealers and to fix prices.

All dealers to operate under license, and furnish all cost data regarding their businesses.

All dealers to give the state five days' notice before changing their prices.

State to have the right to fix prices whenever the oil companies' prices were deemed unfair, the only recourse of the oil companies against such state-fixed prices being to the courts.

Prairie Pipe Line to Add 20,000 Barrels Capacity to Chicago

TULSA, Jan. 5

AN $8,000,000 pipe line construction program to be started at once, was announced yesterday by the Prairie Pipe Line Co. Beginning at its Panova station, near Shawnee, Okla., the company will loop its trunk lines to Griffith, Ind., east of Chicago where the Prairie delivers oil to the system of the Indiana Pipe Line Co. for shipment on to the east. The looping will add about 20,000 barrels to the daily capacity of the Chicago-going system.

The program will call for about 455 miles of pipe, of which 285 miles will be 8-inch and the rest 12-inch. It will be welded line, wrapped at the mills.

Additional engine equipment at pump stations will total about 9,500 horsepower. Diesel engines will be installed in the southern division stations, Humboldt, Kan. being the northern terminus of this division. The Panova station will be given an increase of 1,200 horsepower in the form of two 600-horsepower diesel engines.

Other construction in the form of laterals to reach new producing fields is in contemplation. The only project thus far announced, however, is a 6-inch line, 35 miles long to go from the Florence, Kan., station to the new producing field north of Wichita, Kan. This project, with the field station to be built, will cost approximately $300,000. It has also announced that a 6-inch loop would be built from Addington station to Ringling, Okla., on the Prairie's line from the Panhandle fields of Texas to southern Oklahoma. It will be 24 miles long.

This expansion program means that new markets have been gained by the Prairie Oil & Gas Co., which tenders something like 90 per cent of the oil handled eastward by the pipe line company. It was a surprising development. Sinclair Pipe Line Co. is now adding loops to its Mid-Continent to Chicago system which will give it about 30,000 barrels additional capacity, supplying to the refineries of the Sinclair and the Standard Oil Co. of Indiana oil which previously had been handled by the Prairie.

The Prairie pipe line has been handling, as tender shipment, around 6,000 barrels daily to the refinery of The Texas Co., at Lockport, Ill. and with the completion of the Texas-Empire line from Oklahoma to Chicago district, it will lose that business. Thus about 36,000 barrels room in the Prairie lines is released by the Sinclair and Texas-Empire new lines and on top of that the Prairie adds 20,000 more, or a total to them of about 60,000 barrels daily.

No comment was forthcoming from the Prairie Pipe Line Co. as to where the additional oil handled would go and the Prairie Oil & Gas Co.'s new customers, or increase in business of the old ones, has not been revealed. One theory is that construction to Griffith, Ind., to connection with the Indiana Pipe Line Co. means additional oil will move east to refiners at Atlantic seaboard or inland points.

I.O.M.A. to Meet In March

CHICAGO, Jan. 8.—The annual election of officers of the Independent Oil Men of America will take place at St. Louis, Mo. on March 25 and 26, according to Lou Harrington, executive manager, in the Jan. 7 edition of "Lou's Letter," the association's bulletin.

Operators' Ideas on Unit Drilling Bill Not Yet Crystallized

By Lawrence E. Smith
N. P. N. STAFF WRITER

TULSA, Jan. 5

THE principles of the bill providing for unit development of oil pools, drawn by a committee of the American Bar Association for submission to the legislatures of the various oil producing states, are not complex. No legislative proposals on oil and gas have been written with greater clarity and simplicity. Yet, in attempting to canvass opinion in the Mid-Continent industry, one finds no clear-cut, decisive majority either for or against the bill.

The bill, or rather bills—there are two of them, one providing for compulsory adherence to an operating plan that may be formed by a majority of producers in a new pool and the other affording exemption for such operators from state anti-trust laws—await approval or rejection by the industry before being introduced into the state legislatures.

Such comment as has been made to the writer indicates that opposition will be upon the general ground of undesirability of any legislation and not on the form of the bills themselves. That is generally speaking. Those in opposition agree that, if legislation must be resorted to, the bar association committee has proposed something that is better than anything heretofore attempted.

There will be attacks upon certain portions of the main bill as drawn. Some parts will be opposed by royalty owners who constitute a formidable group in political affairs in any state. Every farmer is, in fact, a royalty owner. He either owns producing royalty or hopes to. Hence, that part of the bill which provides for suspension of drilling obligations to enable producers' agreements to function properly will meet with objections.

In general the opposition will stand upon the argument that no legislation is needed; that it is undesirable to surrender to political agencies the supervision, no matter how routine in character, of privately owned properties; that laws are easier to get upon statute books than to erase and that any political supervision invariably is increased with the passage of time.

FRIENDS of the proposed bill assert that only by providing the element of compulsion will the operators who seek to correct industrial ills be able to deal with the operator who plainly doesn't give a damn what happens to the rest of the industry so long as he "gets his," and whose view is always the immediate present with no reckoning of the future.

They say that the unit plan of development is the method by which the economic mal-adjustment of the industry can be cured and that, when a majority of the operators or wealth represented in a pool agree upon the methods of development and rate of production, the minority should not be permitted to wreck that policy.

AS TO the political situation in this state: Oklahoma's legislature, convening Jan. 7, has a stormy time ahead of it. Political fights have smoldered for months. A strong effort will be made to remove the governor from office and the supreme court is to be investigated, if certain members of the legislature have their way. Various state departments will also come in for their share of legislative displeasure. How much consideration will be given to affairs other than these is a question. Oklahoma is the "key" state in the campaign.

In Oklahoma and Kansas, the division of the Mid-Continent Oil & Gas

Operators Named to Promote Cooperation

TULSA, Jan. 5

STUDY of conditions in the principal oil producing states, in the light of the need for curtailed development, is to be made by a committee of prominent operators named by President Reeser of the American Petroleum Institute.

Members of this committee for the Mid-Continent territory are the same as were named on a committee by President W. N. Davis, of the Mid-Continent association, to promote unit and cooperative development in this territory.

Appointment of the Mid-Continent committee was authorized by the executive committee of the association Dec. 19. Naming its members was delayed until President Davis could secure the acceptance of each member, in view of the work involved.

The plan for an institute committee grew out of conferences held in Chicago during the annual meeting in December. It is authorized to study the following factors:

Estimated amount of oil to be produced in each of the principal oil states this year.

Estimated amount of shut-in production.

Potential production of each state.

Consider recommendations for slowing down wildcatting.

Study the refining capacity of each state and its market outlets.

Study voluntary cooperative movements and their effectiveness.

Report on state legislation as recommended by the American Bar Association sub-committee.

Members of the committee from the Mid-Continent are:

W. C. Franklin Tidal Oil Co., Tulsa, chairman.

W. G. Skelly, of Skelly Oil Co., Tulsa.

W. S. Fitzpatrick, Prairie Oil & Gas Co., Independence, Kans.

A. M. Landon, Independent producer, Independence, Kans.

H. V. Foster, Indian Territory Illuminating Oil Co., Bartlesville.

W. S. Farish, Humble Oil & Refining Co., Houston.

W. H. Francis, Magnolia Petroleum Co., Dallas.

J. S. Bridwell, independent producer, Wichita Falls.

M. J. Grogan, Louisiana Oil Refining Co., Shreveport.

President Davis is ex-officio a member of the committee.

California members are:

L. P. St. Clair, vice president, Union Oil Co. of California.

M. E. Lombardi, Standard Oil Co. of California.

A. L. Guiberson.

S. H. Keoughan, president Continental Oil Co., Denver, is the representative of the Rocky Mountain district.

How Unit Development Law Would Work

HERE'S about how the bill for unit development for oil pools proposed by the committee of the American Bar Association would work if it were to become a law in Oklahoma, or any other oil producing state:

A majority of operators in a new pool, or a prospective pool, would agree, in writing, on a plan of operation embracing any or all of the principal factors of development, as set forth in the bill.

Such a majority would be both numerical as to operators and would also be a majority of the acreage in the area embraced. If the field already were producing it would represent also a majority of the production.

Having formed their plan the operators would next submit a petition to the commission, describing the lands embraced in the area to be subjected to the plan; names and addresses of operators and royalty owners, insofar as known, and other pertinent facts. They would attach a signed copy of the plan of operation agreed upon and ask that it be made the rule of operation on the pool and enforced.

The commission would then hold a hearing, take testimony and either approve the plan, if it found the facts to be in accordance with the petition submitted; or reject it at the cost of the majority operators.

Provision is made for an operators' committee to hold office for one year and annually thereafter, so long as the plan is in force, an election is to be held. The duties of the committee are supervisory—to see whether the rules set up by the majority operators and issued as an order by the commission are being obeyed by all.

Under the chief oil and gas inspector of the state, this committee is given limited authority to investigate methods and to see records of the operators in the pool, the latter extending only to records of production. The committee is charged with the duty of reporting to the commission any violations of the rules following which complaint, the commission will investigate.

If violation of any substantial part of the rules governing the pool occur, the commission will issue a cease and desist order. If this is not obeyed, the attorney general will proceed through a court of the county in which the lease is situated, for mandatory injunction against the offending operator or for the appointment of a receiver for the lease. Appeal from the county court is direct to the supreme court, but the order or judgment issued is not to be stayed during the appeal.

Majority operators may go back before the commission to modify the plan or to have it set aside altogether, as occasion arises.

Association is given first chance to express itself on the proposed law. The executive committee was called to meet on Jan. 8. In Texas, a committee of 15 attorneys representing major companies and independents is studying the proposal and will report to that division of the Mid-Continent association. In California, a committee of the American Bar Association is making a similar study. The Louisiana-Arkansas division of the Mid-Continent association has not arranged for any study as yet. The Louisiana legislature does not meet this year but that of Arkansas does.

THE proposed law, whose principles have repeatedly been discussed in these columns, is revolutionary in character. It would change, at a single move, the highly individualistic method now followed in developing a pool, substituting therefor concert of action as dictated by majority rule.

Unit development, or something akin to it, would be compelled when a majority of the operators in a pool ordered it. It would be discretionary with the operators whether any plan would be set up in a new pool, but, once established, the machinery of the state would compel compliance to its terms so long as the operators desired to keep the plan in effect.

The committee, in its report addressed to the mineral section of the American Bar Association, asserted it had attempted to frame and act which would preserve the rights of all operators and royalty owners in a pool, and at the same time vest in the industry the discretion as to methods it now enjoys, providing merely a means whereby the principle of majority rule will obtain.

It said that voluntary agreements are desirable, but that "from the evidence assembled your committee is of the opinion that voluntary action on the part of the industry will not in the near future, and perhaps never, meet the problem . . . . The reason for this conclusion is not far to seek. The answer lies in the never-changing dictates of human nature. A refiner holding a single lease in an important and prolific oil pool, needing the crude for his business, will drill without restraint and produce to capacity regardless of the fact that his operations necessitate the same intensive drilling and producing campaign on the part of every operator in the pool. Again, a producer owning one lease in a pool driven by financial necessity or animated by the natural desire to make 'hay while the sun shines' will act likewise regardless of the consideration that his operations will be followed by a similar intensive and speedy work by his competitors in the pool. From the narrow point of view, these practices cannot be condemned.

"ON THE other hand, with the problem of national conservation at stake and taking into account also the correlative rights and obligations of the operators in the same pool, your committee cannot believe that this condition should be permitted to continue. The all-important question is this: In every pursuit save the petroleum industry a producer may either cease to produce entirely or limit his production to meet the market demand. Your committee is of opinion that one operator in an oil pool has the same constitutional right to refrain or limit his production as has another operator therein the right to drill without restriction and to produce to capacity.

"This conflict in purpose and interest coupled with the community nature of an oil and gas pool irresistably suggests the solution of this important problem in the minds of your committee. The state under the police power may adjust and regulate these conflicting rights in a community property. No operator may be prevented from drilling and producing entirely and no operator may be permitted to drill without restraint and to produce to capacity. The law may step in and reconcile the position of both. It is for the practical reasons here stated and upon the basis of the legal theory here presented that your committee presumes to offer a type of legislation for the compulsory cooperative development and operation of an oil and gas pool."

ON THE question of compulsory unit development — the actual merging of properties into one company—the committee reported that it found no constitutional basis for such action. That would be a taking and not a regulation of property. If the police power of the state is to be called in, it "must be in relation to a plan for the compulsory cooperative development and operation of oil pools."

"Your committee submits its bills relating to this subject with the following considerations in mind," says the report: "First. The preamble to the bill indicates that it is the purpose of the legislature to ground the exercise of police power in this connection upon two propositions. Primarily, upon the correlative situation of the oil operators and royalty owners in the same oil and gas pool. Since the statute proposed is designed

to adjust and regulate the correlative position of the parties in interest, we are clearly of opinion that the exercise of the police power of the state in this regard is sustainable.

"THE second constitutional basis for the proposed statute is that the legislation involves the public interest in conserving an irreplaceable and indispensable natural resource. Here, we recognize that we may be on debatable ground. Nevertheless, we believe that the tendency of the decisions would support the statute on this foundation also. The second important consideration which your committee continually respected presents a practical and not a legal phase. The business of producing oil is not only highly technical, but it is perhaps the most individualistic pursuit known to modern industry. Naturally, an oil operator in the development and operation of his property makes full use of his skill and experience in the undertaking, but other factors sometimes equally controlling, and at least always present, accentuate the individualistic aspect of the business. The financial daring, or the reverse, his idiosyncrasies and, in the vernacular of the day, his hunches, enter into his exploring and producing activities.

"When all of these elements are combined, the conclusion irresistibly follows that this enterprise could not, and should not, submit to any far-reaching scheme of governmental interference or regulation. This conclusion is just as much in the public interest as it is in the interest of the petroleum industry. Your committee in its proposal took these all-important considerations into account. The act submitted reserves to the industry as much freedom in the carrying on of its business as possible, consistent with the belief on our part that notwithstanding the necessity of preserving individualism in the enterprise, that individualism, in some degree at least, must yield to the correlative situation of the operators in the same pool and to the public welfare.

"Again, viewing the whole problem in its practical bearing, your committee appreciates that the proposed statute, or even a substantial modification thereof, cannot be enacted in the four or five oil producing states unless it receives the general and wholehearted support of a considerable majority of the industry."

In the major bill, that relating to cooperative development, after reciting the purpose of the act and defining the terms employed, a definition is given of "cooperative development and operation of an oil and gas pool" to mean the practice of common methods on each separate holding in the pool as to well spacing, location from lease boundaries, time of drilling, proration, repressuring and use of any other methods designed to produce economies in operation, conserve gas energy and increase ultimate recovery. Jurisdiction is vested in a state commission, varying with the states as to title. In Oklahoma, presumably, the corporation commission would have jurisdiction and in Texas the railroad commission, these now being in charge of oil and gas enforcement work.

Conference on Code St. Louis, Feb. 11

Bulletin

WASHINGTON, Jan. 8.—The oil industry's conference on the Code of Marketing Practices drafted and endorsed at the meeting of the American Petroleum Institute in Chicago last month will be held at Hotel Statler, St. Louis, Feb. 11.

This was announced by the Federal Trade Commission today. The meeting will be under the chairmanship of Commissioner McCulloch and Mr. Flannery, of the commission's staff, in charge of trade practice conference work, will also attend.

The meeting is to be open, both for attendance and taking part in discussion, to all interested in the marketing of petroleum products.

ONE of the important provisions of the bill has to do with the royalty interests. It is provided that, if any operator in the pool covered by an agreement of this character finds a drilling or producing obligation in his lease standing in the way of compliance with the plan, he can file an intervening petition with the commission. The commission is vested, under the proposed law, with the jurisdiction to set aside such obligations for not to exceed two years from the time the obligation arose nor more than two years from the expiration date of the fixed term of the lease, provided one paying well has been or will be drilled and providing also that a royalty owner cannot be made to suffer drainage. In other words, under this law, the royalty interests could not compel an operator to drill wells that would upset the workings of the plan, nor produce to capacity those he drilled, if the plan embodied a proration feature. On this point the committee said in its report:

"No provisions of the proposed bill rises to higher importance than this one. At any time that the majority operators may agree upon a cooperative plan and apply to the conservation commission for the application of the plan to the entire pool, some operators therein will be confronted by express or implied drilling or producing obligations in their leases within the pool or with leases therein on the point of expiration unless production should be brought about within a very limited time. In almost any conceivable case it will be found that these outstanding obligations conflict with the cooperative plan. Unless the royalty owners can be brought within the compulsory provisions of the plan, the entire project must fall. This section assumes to perform this particular office.

"To begin with, no general rule of conduct can be laid down to meet the situation of the royalty owner. The operator who is confronted by outstanding drilling or producing obligations or the probability of an expiring lease must invoke the jurisdiction of the commission for relief. No other workable method is perceived by your committee. This brings into view some very important constitutional questions. The point presented here is an act of the state legislature which violates the impairment of contract clause of the federal constitution. It is fundamental, of course, that this provision of the federal constitution rises to no higher dignity or sanctity than the due process clause. If the police regulation is reasonable, it will survive the impairment of contract provision as well as that of due process.

"Upon this reasoning, your committee is of the opinion that the provision in this section for the suspension of drilling obligations whether related to express covenants or to expiring leases can be upheld as a proper and reasonable exercise of the police power. On the other hand, the striking down of the implied covenants for further development and for production to capacity present a graver question. Since the purpose of the bill proposed is to adjust the correlative rights and obligations of all persons interested in the pool, whether operators or royalty owners, your committee is of opinion that this part of the section can be upheld. We do not pretend to say that our view in this regard is not debatable. We do think, however, that a case of this character properly presented would induce a holding that the royalty owners must yield to all of the provisions of this act."

THE second of the two bills drawn by the committee relates to state anti-trust laws. It provides that oil operators, agreeing upon plans for common methods of development or curtailment of drilling or production during periods of overproduction, shall not be deemed in violation of such state laws. A bill prepared by the Committee of Nine, appointed at the request of the Federal Oil Conservation Board, would perform the same function with respect to federal anti-trust laws. It is expected to be introduced into Congress soon.

High Spots in Examiners' Recommendations to the Interstate Commerce Commission on Oil Rates East of the Mississippi River

1. Through, one-figure rates recommended from western refining groups to both Northeast and Southeast.

2. Differentials on shipments to the Northeast from Mid-Continent origin groups to follow those established in Mid-Continent Oil Rates, 1925.

3. Shreveport-El Dorado, and Baton Rouge-New Orleans refining groups would lose their present freight advantage under Oklahoma to Michigan, Indiana, Ohio and contiguous territory.

4. Texas refining groups likewise would take higher rates than Oklahoma and Kansas to northeastern points.

5. Central Kansas and Oklahoma refineries would be included in Group 3, and obtain a reduction of .5 per cent 100 pounds to Indiana destinations, reductions ranging from 1 to 5 cents per hundred into Michigan, reductions of from 1.5 to 7 cents per hundred into Ohio, with reductions running as high as 10 to 13 cents per hundred to far eastern destinations.

6. Mississippi River and Lawrenceville, Ill., refiners to keep the temporary reduction of 2½ cents per hundred granted by the railroads to Indiana destinations which is scheduled to expire Feb. 1, 1929.

7. A mileage scale is recommended on shipments from the Southwest to the Southeast, creating substantially lower rates.

8. Fuel oil rates would be fixed at 80 per cent of the refined oil rate but the estimated weight would be increased from 6.6 to 7.4 pounds per gallon east of the Mississippi. This would create substantial rate reductions.

9. Natural gasoline manufacturers' plea for an estimated weight of 5.5 pounds per gallon was rejected by the examiners.

Through Rates, Mid-Continent to East, Recommended by I.C.C. Examiners

By J. C. Chatfield
N. P. N. STAFF WRITER

TULSA, Jan. 5

THROUGH rates on refined oils from Mid-Continent **refining** centers to consuming states east of the Mississippi river have been recommended to the Interstate Commerce Commission by Examiners John B. Keeler and P. S. Peyser in a report of findings resulting from the general investigation of oil rates in the Northeast and Southeast, known as Docket No. 17,000 part 4. The report contains findings resulting from a large number of rate hearings held in 1926 and 1927.

The through rates proposed by the examiners are on a lower scale and would create substantial reductions to many points, if adopted by the commission. Reductions from Oklahoma range from 0.5 cent per hundred pounds to Indiana points, to a maximum of 5 cents per 100 in Michigan, 7 cents per hundred in Ohio and as high as 13 cents per 100 pounds in Atlantic coast states.

Reductions proposed on shipments into Indiana, Michigan and Ohio are considered the most important by Mid-Continent refiners, although copies of the report just reached the field and traffic experts have not had time to digest the 91-page report with its 22 appendices which alone constitute a 46-page book. Reductions in rates to Maryland, New York, Pennsylvania and New England are considered relatively unimportant since very little refined oil moves from the Mid-Continent to that consuming area. Natural gasoline will be affected more than other commodities to New York, New England and Pennsylvania.

Table No. 1

Present and Proposed Refined Oil Rates from Oklahoma and Central Kansas Refineries to Northeastern Points. Rates in Cents per Hundred Pounds.

Destination	Present	Proposed	Reduction
Jackson, Mich.	54.5	50	4.5
Kalamazoo, Mich.	52	48	4
Grand Rapids, Mich.	53	52	1
Lansing, Mich.	55.5	52	3.5
Detroit, Mich.	56	52	4
Cincinnati, O.	51.5	46	5.5
Dayton, O.	52	46	6
Lima, O.	53	48	5
Columbus, O.	54	50	4
Pomeroy, O.	56	52	4
Cleveland, O.	56	54	2
Parkersburg, W. Va.	56	54	2
Wheeling, W. Va.	60.5	56	4.5
Pittsburgh, Pa.	60.5	58	2.5
Johnstown, Pa.	66.5	61	5.5
Harrisburg, Pa.	75	64	11
Philadelphia, Pa.	76	67	9
Buffalo, N. Y.	60.5	61	*.5
Utica, N. Y.	74	66	7
New York City	78	68	10
Boston, Mass.	80	70	10

*Increase

The Mid-Continent group of refiners will be in a better position to compete with Mississippi river, Illinois and Ohio refiners for business in the Ohio river valley and the Great Lakes region if the report is adopted by the commission.

The Indiana-Illinois group of refiners would be given permanently the 2.5-cent temporary reduction in rates to Indiana destinations which is supposed to expire on Feb. 1, but as a whole the rates of these manufacturers would not be changed while those from the Southwest are recommended for reduction.

The growing importance of New Orleans refinery products in the upper Mississippi and Ohio valleys would be hindered by the proposed order of the examiners. They found that there is "No water competition at present from New Orleans and Baton Rouge to the Ohio river crossings and potential competition cannot be accepted as

justifying the present discrimination." With that statement the examiners propose that rates from New Orleans and Baton Rouge in the future should not be lower than those from Oklahoma or Shreveport and El Dorado to Ohio river crossings and hence to points in Indiana, Michigan and Ohio.

As between Oklahoma and the Shreveport-El Dorado group of refineries, the report proposes a parity of rates to the Northeast. This part of the report will be pleasing to the Oklahoma and Central Kansas refiners but will be considered as a blow to the Shreveport-El Dorado operators. At the present time the rates from Louisiana and Arkansas are lower to Indiana, Michigan and Ohio than those from Group 3, with the result that very little Oklahoma gasoline has been marketed in the eastern part of this territory for some time.

In establishing the new through rates to the Central Freight Association territory the examiners took a key rate of 68 cents per 100 pounds from Group 3 to New York City and a key rate of 46 cents per 100 pounds from Group 3 to eastern Indiana points. Between these two extremes the examiners graded the rates up as the haul increased.

During the course of the general investigation hearings, natural gasoline manufacturers entered a plea that the estimated weight of their product be lowered from 6.6 to 5.5 pounds per gallon, a figure more nearly in line with its actual weight. The examiners refused to allow the lower weight basis, but suggested that the carriers might properly consider the fact that the product is a raw material which must be blended and other factors affecting the product in providing a different basis of rates.

THE examiners said that "Certainly no basis appears for a finding that a tank car of natural gasoline should produce less revenue than one containing ordinary gasoline."

Western refinery interests were pleased at the findings of the examiners that fuel oil rates should be 80 per cent of the refined rate, with the provision that a weight of 7.4 pounds per gallon shall be used for the heavy oil. This decision follows the precedent set by the commission in the Mid-Continent Oil Rate case of 1925.

In the past, heavy oil rates in the east have been 100 per cent of the refined oil rates but an estimated weight of 6.6 pounds per gallon was used, giving the shipper some benefit in that way since the fuel actually weighs an average of 7.4 pounds per gallon. Freight charges on heavy oils to C.F.A. territory and the Southeast will be reduced materially if this part of the report is adopted.

From the Mid-Continent to the territory east of the Illinois-Indiana state line and north of the Ohio river, the examiners recommended that differentials between various origin groups be retained on about the same basis as those prescribed in the 1925 Mid-Continent case.

Table No. 2 gives a statement of differentials over and under Group 3 which was taken as the base group. Group 3 would include Central Kansas as well as Oklahoma as in the modified order in the 1925 case.

Table No. 1 gives present and proposed rates from Group 3 to a number of representative destinations in the territory involved so that proposed rates from any Mid-Continent group may be calculated to these points by comparison with the differentials in Table 2.

An interesting feature of the report is that the examiners failed to set up a base group with a system of differentials in arriving at their rate proposals into the Southeast. Instead, a straight mileage scale was proposed. It is planned to use the average distance from points in each group of origin to the destination to arrive at a rate.

UNDER this arrangement it is apparent that the Shreveport-El Dorado, and New Orleans-Baton Rouge groups will have rates well under those from Oklahoma and Texas. As between Oklahoma and North Texas, to some points Oklahoma will have a slightly lower rate while to others North Texas will have some advantage.

For the most part rates to the Southeast would be reduced substantially under the proposed mileage scale, in some cases as much as 14 cents per 100 pounds. Exceptions to the mileage scale are made in the cases of Louisville, Ky., which will take a 41-cent rate from Oklahoma and Paducah, Ky., which will take a 37-cent rate. To certain points near the Mississippi river the mileage scale would increase rates.

Table No. 3 gives a statement of present rates from Oklahoma and North Texas to certain Southeastern points with proposed rates calculated by the writer from the mileage scale.

The examiners agreed with the Indian Refining Co. at Lawrenceville, that its rates into Kentucky should not be on a higher basis, mileage considered, than rates from New Orleans to Kentucky as is the case at present.

Table No. 2

Schedule of Proposed Differentials, Over and Under Group 3 on Shipments of Refined Oils from the Mid-Continent to the Northeast. Figures in Cents per Hundred Pounds.

Destination Area	Under Group 3 — Kansas City (Group 1)	Under Group 3 — South-Eastern Kansas (Group 2)	Over Group 3 — No. Tex.	Over Group 3 — Ranger	Over Group 3 — So. Tex.	Over Group 3 — New Orleans Shreveport El Dorado
Ohio, Michigan, W. Va., Western Pennsylvania	*5 to 6	2	2	3.5	2	0
N. Y., Maryland, Eastern Pennsylvania	4	1	2	3	2	0
New England	3	1	2	2	2	0

*Kansas City would have a 6 cent differential under Oklahoma and Central Kansas to Kalamazoo and Hillsdale, Mich., and to Cincinnati, Dayton, Lima and adjacent Ohio points.

Table No. 3

Schedule Showing Typical Refined Oil Rates from Oklahoma and North Texas to Southeastern Destinations Proposed as Compared with Present Rates. Figures in Cents per Hundred Pounds.

Destination	Present Rates From Oklahoma	Present Rates From North Texas	Proposed Rates From Oklahoma	Proposed Rates From North Texas
Jackson, Miss.	48	30.5	43	41
Birmingham, Ala.	55.5	51	48	48
Nashville, Tenn.	46.5	46	48	49
Chattanooga, Tenn.	57	56.5	50	51
Atlanta, Ga.	64.5	58.5	53	54
Greenville, S. C.	72	67.5	58	58
Charlotte, N. C.	74	70	61	61
Raleigh, N. C.	77	72	65	65

Standard Methods Sought For Handling Crude

HOUSTON, Jan. 5

FIVE American Petroleum Institute groups, all approaching their problems through working or technical sub-committees, are now engaged in the movement to effect standardized procedure for measuring, sampling and testing crude oil.

The movement, which got under way last October[1] through appointment of a general committee by the Institute president, seeks uniform methods as a means of avoiding the disputes that frequently arise between the producer, the seller, the pipeline company or other purchasing agency.

It had been found by preliminary investigation that methods used in different fields varied widely in arriving at water and b.s. content in crude, in deducting for water and b.s., in correcting volume for difference in temperature and in other procedure.

The general committee, headed by President W. S. Farish of Humble Oil & Refining Co., as chairman, took up the question of national organization at the December meeting of the A.P.I. in Chicago.

Five national sub-committees, or groups, were provided for and chairmen named for four of them.

Carl A. Young, standardization director of the A.P.I. at Dallas, heads a sub-committee on uniform tank measurements and gaging.

Dr. R. P. Anderson, Institute technologist at New York, is chairman of the sub-committee of refinery technologists and chemists.

W. M. Mattison, director of the A.P.I. division of accounting, heads a sub-committee of oil accountants.

W. R. Trelford, Humble Oil & Refining Co., Houston, is chairman of the marine transportation sub-committee.

A sub-committee on pipelines will be appointed in each region by the regional chairman.

It will be the function of Mr. Young's group to recommend a standard method for measuring or "strapping" field storage and production tanks as well as to decide on standard gage tables.

Dr. Anderson's committee will recommend:

(1)—Standard equipment for gagers, including hydrometer, thermometer, thieving equipment, gaging line, centrifuge, and so forth.

(2)—A standard method of obtaining samples truly representative of crude material contained in tankage of various sizes.

(3)—A standard method of testing crude material to accurately determine its gravity, temperature, percentage of basic sediment, water and other impurities. Without sacrificing basic scientific principles such a method should be sufficiently simple to insure the same result with both field and technical personnel, it is believed.

(4)—This committee will cooperate with the pipeline group in determining proper deductions and temperature corrections to be applied to crude of various grades and gravities in the determination of net quantities.

(5)—It also will cooperate with the oil accountants group in the preparation of an abridged table to be used in correcting volume for difference in temperature.

The pipeline group will determine the proper deduction to be made of basic sediment, water and other impurities contained in crude material, also the maximum content that will be acceptable.

Other recommendations of the pipeline group will include the proper deduction to be made to cover evaporation or other losses in the gathering of the various grades of crude in the field; proper deduction in the event of pipeline transportation; and the maximum temperature at which crude material will be received and the differential deduction, if any, to be applied in the event artificial heat is utilized to render crude marketable.

The pipeline group will also recommend a uniform set of instructions to gagers and will consider the question of observing the indicated A.P.I. gravity (rather than true gravity) of crudes containing considerable basic sediment, water and other impurities (as in the case of California emulsion crudes, etc.).

Mr. Mattison's committee will recommend standardized forms of gaging tickets and other reports or forms of a general nature; will recommend and illustrate a standard practice to be followed in properly computing net quantities from gaging tickets; and will recommend an abridged table showing the proper coefficients of expansion applicable to each range of gravity for the purpose of correcting volume for difference in temperature.

It will be the function of Mr. Trelford's committee to recommend a uniform schedule of demurrage rules and charges applicable to bulk cargoes; and to consider and assist in the adoption of a standardized practice for measuring, sampling and testing crude oil that would apply equally to marine transportation.

After the Chicago meeting, which was mainly of organization character, Chairman Farish of the general committee announced that the several groups would work steadily toward presenting a tentative code.

The tentative code would embrace recommendations on all of the problems listed, after which it would be circulated to the regional committees for review, criticism and approval before final action by the general committee.

It is hoped the code can be made available for consideration at the 1929 annual meeting of the Institute.

General A.P.I. Committee on Standardized Procedure for Handling Crude

W. S. Farish (Chairman), Humble Oil & Refining Co., Houston.

O. D. Donnell, Ohio Oil Co., Findlay, Ohio.

R. W. Hanna, Standard Oil Co. of Cal., San Francisco.

S. H. Keoughan, Continental Oil Co., Denver.

E. B. Reeser, Barnsdall Corporation, Tulsa.

C. A. Young (Secretary), American Petroleum Institute, Dallas.

Buerger Is Vice President Of Gulf Refining Co.

PITTSBURGH, Jan. 7.—Charles B. Buerger, formerly general manager of refineries, has been made vice president of the Gulf Refining Co. following the retirement of George H. Taber from that position, it is announced by George S. Davison, president of the company.

Other changes in the manufacturing department are:

John W. Tryon of Port Arthur, succeeds Mr. Buerger as general manager.

George L. Prichard is assistant general manager with headquarters in Pittsburgh; William A. Slater, Port Arthur, is general superintendent of Port Arthur and Fort Worth refineries; Herbert Henderson, Pittsburgh, is manager of construction of all refineries; John G. Glasgow, Port Arthur, is chief engineer; Harry J. Kelly, Port Arthur, is assistant chief engineer; Luther R. Jones is manager of the Philadelphia refinery; James V. Baney is superintendent of the Philadelphia refinery; Harris V. Sanderson is manager of the Bayonne refinery; Herschel G. Smith, Port Arthur, is manager of refinery technology and O. G. Wilson Jr., Port Arthur, is chief chemist.

In the marine department, James Kennedy, New York, is general manager, George N. Bliss, Port Arthur, assistant general manager, Willard F. Jones, New York, superintendent and Charles H. Ebert, Pittsburgh, marine traffic manager.

1—National Petroleum News, page 56, Oct. 10, 1928.

Mystery Surrounding Motorists' Bureau And Substitution Inquiry Lifted

By Roger B. Stafford
N. P. N. STAFF WRITER

CLEVELAND, Jan. 7

MUCH of the mystery that has surrounded the identity of the backers of the Motorists Protective Bureau, Inc., of New York which recently broadcast an allegation* of motor oil substitution in the newspapers of Canton, O., has been dispelled. The president of the bureau is Dr. Henry J. Masson, professor of chemical engineering at New York university, who was the analyst for the American Fair Trade (?) Association in its campaign against alleged substitution two or three years ago. Frank S. Douglass, who was chief of the department of investigation of the trade association, is secretary and manager of the bureau.

The only other officer is Percy E. Williamson, Jr., a member of the New York bar whose office at Room 909, 36 E. 44th St., New York, is the headquarters of the bureau. Williamson is vice-president of the bureau which was chartered in Delaware about three months ago as an association not for profit.

The Motorists Protective Bureau was formed at the request of several large oil companies whose dealers were substituting cheaper motor oils for the branded oils of these companies, according to Douglass who at the behest of the Vacuum Oil Co. called with Dr. Masson at the New York office of NATIONAL PETROLEUM NEWS a few days ago.

The American Fair Trade (?) Association, Douglass said, was not functioning well enough in the fight against alleged motor oil substitution to suit the large oil company backers of the association, so the large oil companies asked him, the head of the operating end of the association, to do for the prospective bureau (It was yet to be organized, Douglass inferred.) what he was not doing for the American Fair Trade (?) Association.

So with Dr. Masson, who was analyzing the oils Douglass or his assistants were collecting, and with Williamson, the lawyer, the Motorists Protective Association was organized.

Douglass said he expected to get into the bureau as clients all the clients of the American Fair Trade (?) Association. These included, according to Douglass, not only the Vacuum Oil Co. but the Gulf Refining Co., Tide Water Oil Sales Corp., The Texas Co., and the Atlantic Refining Co. Dr. Masson and Douglass said they were not ready to say whether any company other than the Vacuum had come into the new organization.

Neither Dr. Masson nor Douglass would be specific about any "investigations" outside the one at Canton. Their charter provides that they may "investigate" gasoline and automobile accessories as well as motor oils but the Canton case seems to be the only one completed by them.

"Aren't you fellows just creating a couple of soft jobs for yourselves at the expense of the marketing division of the oil industry?" they were asked.

"Aren't you reporting for a profit to yourself?" they countered but denied that their work was of a destructive and not constructive nature.

They maintain that the refiners of national brands of motor oils are unable to police their brands and dealers themselves, that the sales forces of these national brand companies are able to make the necessary investigations.

THE bureau also hopes to create in the minds of the motoring public a fear that it is being "gypped" when it goes to buy motor oil and will demand legislation that will make for easier convictions in the cases of substitution that can be found.

Statements issued to the Canton newspapers through the Canton Automobile Club that 75 per cent of the service stations *at which motor oil was purchased* by Douglass and the membership salesman of the Canton club that accompanied him on his trip, were practicing substitution, could not be backed up by the report of Douglass to A. R. McConnell, manager of the Canton club.

The 75 per cent accusation was contained in the press story sent McConnell by Douglass but when the story reached the newspapers, one made it that 75 per cent of the stations *investigated* were practicing substitution.

Because about one third of the stations in Canton were investigated, the oil companies immediately called McConnell and the leading Canton newspaper to account. McConnell after several days investigation apologized in the Canton *Repository* for falling for the investigation which, it developed, was made not for the protection of the motoring public at large but for one company engaged in the manufacture of motor oils.

Douglass reported purchases of oils at 18 dealers or outlets and charges that oil had been substituted at six of the outlets, which were owned by five different persons or distributors. Substitution was being practiced at two stations of a distributor of one of the major integrated companies, it was charged. As oils were purchased at only 18 outlets and substitution was found at only six, or 33 1/3 per cent, Douglass could not explain why he wrote 75 per cent in his story to McConnell for the Canton newspapers.

The report of Dr. Masson showed only one oil that could be classed as poor. It had a low flash point and low viscosity.

At the Vacuum Oil Co. offices in New York is was said the oil industry was not fully aware of the extent of substitution. It was argued that the distributors of national brands of motor oils were compelled to employ some agency to police their products.

It was denied that any intention was made to injure the business or reputation of any of the oil marketers in any locality where one of these "investigations" might be made but responsibility for any newspaper propaganda, truthful or untruthful, was disclaimed. The comany intended to put an end to all substitution and would seek laws dealing specifically against motor oil substitution, an executive asserted. It was said it was virtually impossible to get a conviction of a substituter under the false branding or false pretense statutes.

IT WAS also said the company could not police its products everywhere and that it was necessary to employ some outside agency. The company would not disclose the nature of its arrangement with the Motorists Protective Bureau. Other oil companies were associated with it, it was declared.

In the quest for Douglass when the Canton case happened the trail led to R. G. D. Douglas, a lawyer whose office is in the next suite to that of Williamson. Frank Douglass, while making his headquarters with Williamson, was unknown to employes of the building at 36 W. 44th St. R. G. D. Douglas has had nothing to do with the Motorists Protective Bureau.

*Story of activities of Motorists Protective Bureau was published on page 30 of NATIONAL PETROLEUM NEWS for Dec. 26, 1928.

Federal Trade Body Asked to Probe Chicago Station Margins

By Ward K. Halbert
N. P. N. STAFF WRITER

CHICAGO, Jan. 4

FILLING station owners in Chicago have asked the Federal Trade Commission to make the major oil companies operating in this city, restore the old Quantity Discount Agreement under which they did business for about four years prior to Oct. 1, 1928. They want the old Q.D.A. back, with its 5-cent and 6-cent margins, saying they cannot remain in business under existing trade contracts.

George N. Murdock, a Chicago lawyer, well known in Illinois politics and successful in his profession, spent a week in Washington, late in December, taking care of the matter of filing a petition with the commission on behalf of 40 clients, all operators of private filling stations in Cook county, Ill. The petition names seven defendants: Standard Oil Co. of Indiana, Sinclair Refining Co., The Texas Co., Shell Petroleum Corp., Sun Oil Co., Shaffer Oil & Refining Co. and Cities Service Co.

The allegation is that the seven defendants have violated the act creating the Federal Trade Commission by engaging in unfair methods of competition; by conspiring to monopolize the gasoline retailing business, and by interfering with the business of their small competitors. Mr. Murdock says he expects action from the Federal Trade Commission within the month. The first move of the commission, unless it ignores the matter entirely, is to hold an investigation in Chicago.

The commission has offices in the Transportation building, here. Probably the investigation will take place there if at all. First the commission will send formal notices to the seven defendants to appear and show cause why "cease and desist orders" should not be issued against their marketing methods. Then if the major oil companies cannot make the commission see the reason for changing the old Q.D.A., the matter will be dragged into court.

In identifying the defendants in formal legal verbiage, the petition speaks of the Standard Oil Co. of Indiana in the following words:

"It is engaged in the production, refining, transporting and marketing of petroleum and by-products, and is the world's largest manufacturer and distributor of gasoline. * * * and together with its subsidiaries controls the production and distribution of gasoline in the United States."

Any oil company having a large issue of stock to place on the market might do well to consider the author of this petition as a writer of sales literature and prospecti. Cities Service Co., also "crashed" the petition with a boost as "one of the largest producers of high grade refinable crude oil in the United States."

The economic situation among filling station men generally is clearly set forth in the petition. It points out that many of the filling station owners of Chicago were allowed by the major companies to earn 6 cents a gallon on all the gasoline they handled, prior to Oct. 1, 1928, and that since that time they have not been allowed to earn more than 3 cents a gallon by the defendant companies.

THIS development brought about an acute situation with many owners of private filling stations. Their possible earning per gallon was substantially cut in half on Oct. 1. Then in 60 days the snows of December reduced the volume of business probably 30 per cent. Moreover, winter brings additional overhead expenses to every filling station operator in the form of heat and light bills.

The worst feature of the whole thing has been that rentals have not declined. The owners are tied up on contracts with landlords for a stipulated monthly rental. Those rentals were based on the value of the lots for filling station sites when their worth was exaggerated by wide gasoline margins. Now they are worth much less than the unfortunate oil dealers have to pay.

Filling stations are closing up in considerable numbers in Chicago. A short motor trip is all that is necessary to prove that to anybody. An estimate of the total number closed recently in Chicago is not available but it is reliably reported that 114 stations were closed in St. Louis between Nov. 1 and Christmas, more than 50 in Louisville and 40-odd in Indianapolis.

Of course if the Federal Trade Commission considers this matter it cannot help but take cognizance of the public's interest. Today the retail gasoline price in Chicago is 16 cents. If the dealers were getting 6 cents of that for pumping the liquid from an underground tank into the tanks of motor cars, they would earn for that small service more than one-third of the total retail price. There would be 10 cents left for the oil producer, the refiner, the railroad company and the jobber to divide up among themselves.

If the agency that brings the oil from the earth, the one that manufactures something useful out of it, the carrier that brings it 1000 miles by pipe or rail, and the wholesaler who stores and handles it at his own risk all averaged 2½ cents a gallon for gasoline, the wheels of the whole industry would stop.

In other words, if the dealer gets 6 cents now Mr. Consumer will have to pay about 3 cents a gallon more than he is paying and that might bring about considerable argument.

The petition states in Section 9 that the defendants have refused to permit the petitioners who handle their products from handling those of any other refiner. This does not happen to be quite a correct account of what has taken place but it is true that some of the major companies have offered inducements to dealers to handle one line exclusively.

Section 10 sets forth that when one company changes the price, all do. That statement has been made by politicians for years as a proof that a combination exists in the oil business. Only a superficial study of the business is necessary to show that the uniformity of price is an indication of the keenest kind of competition.

The petition states in about so many words, that the big companies are responsible for getting all the filling station men in the business, that they invited them in with wide margins of profit and most of their expenses defrayed. This is presented as an argument that the big companies should exert every effort to keep these men in the business.

IN SECTION 15, the petition alleges that representatives of the seven accused major companies meet weekly in the Stevens Hotel, Chicago, and there agree on prices and other matters of policy. And in Section 16 it says that the filling station men would be able to buy gasoline from other refiners cheaper but that the defendants refuse to sell the dealers the pumps that stand on their station lots.

The gist of the allegations of the

filling station men are embodied in Section 8 of the petition. It is as follows:

"That for many years past each of the said producers has actively solicited and sought the business of petitioners herein and has freely entered into contracts with petitioners, agreeing to supply them with gasoline for resale at such rates and under contracts and agreements the terms of which would return a profit to petitioners of from 5 to 6 cents per gallon on all gasoline sold, and have permitted petitioners freely to buy and sell gasoline of other brands and other products used by automobile owners other than those manufactured by the particular producer supplying each particular petitioner; but that on or about Sept. 1, 1928, the producer corporations, conspired and agreed together that they would cancel all existing contracts between them the said producers and petitioners herein, and refuse and decline to re-enter into any contract with petitioners which would permit petitioners to sell gasoline at a profit of more than from 1½ to 3 cents per gallon. These contracts were based upon an article published in a magazine known as the NATIONAL PETROLEUM NEWS, of date of Sept. 5, 1928, attached hereto and designated Exhibit "A." Copies of contracts entered into heretofore and those now demanded by said producers are attached hereto. That the contracts of each and all of the said producers are to all intents and purposes practically the same as copies attached hereto; that they were sent out simultaneously and took effect at the same time."

Ames of Kanotex Refining Dies Suddenly at Home

TULSA, Jan. 7.—John McEwen Ames, organizer and president of the Kanotex Refining Co., at Arkansas City, Kan., died suddenly from a heart attack Jan. 6 at his home in Arkansas City. Mr. Ames was 64 years of age.

He moved to Arkansas City in 1905 from New York, where he had been vice-president of the American Car and Foundry Co., and organized the Kanotex Co. He has been actively engaged in the refining business since that time and was one of the best known executives in the Mid-Continent.

He is survived by his widow, two brothers and three sisters. Funeral services were to be held Jan. 8 afternoon at Arkansas City.

R. T. McDuff, formerly field superintendent of the Pure Oil Co., at Lost Lake, Gulf Coastal Texas division, has been transferred to Tulsa. C. C. Hummer succeeded him in charge of Lost Lake operations.

G. L. Watson, Pioneer Oil Producer Is Dead

G. L. Watson
Veteran oil producer, who died on train

CLEVELAND, Jan. 7

THE oil producing industry lost one of its pioneer members in the death recently of Gilbert L. Watson of Parkersburg, W. Va. When the Indiana and western Ohio producing fields were opened, Mr. Watson was reputed to be one of the three largest individual producers in the United States and he was still a large operator at the time of his death, his interests being scattered over five states.

He was president of five oil producing companies, the Hudson Oil Co., the New York Petroleum Co., the Colonial Oil Co., the Power Oil Co. and the Progress Oil Co. His sole surviving child is Cornelius B. Watson, vice president of the Pure Oil Co.

Death came to Mr. Watson on a train Dec. 21 while he was on the way from a vacation in Florida to his home in Parkersburg.

Mr. Watson was born at Olean, N. Y., May 26, 1855 of an old New England family whose forebears came to this country from Scotland about 1629 and settled around Hartford, Conn. He was educated in Olean Academy and at the age of 15 went to work as operator and manager of the Olean office of the Western Union Telegraph Co., remaining in that occupation until he was 20 years old.

In 1875 he opened for the Enterprise Transportation Co., the first pipe line office for the purchase of crude oil at Bradford. Two years later this business was taken over by the Standard Oil Co. but Mr. Watson continued in the production end of the Enterprise until 1884 when he went into business as an Independent producer. He started operations in the Bradford field and gradually his activity extended down through Butler and Washington counties, in Pennsylvania. During the Belmont excitement in 1891, he entered the West Virginia field.

He had operated in nearly every oil producing county in West Virginia and also in Ohio, Indiana, Kentucky, Illinois and Oklahoma. He was remarkably successful in his operations. In 1896 he moved his family to Parkersburg.

Mr. Watson was a Knight Templar, a thirty-second degree Scottish Rite Mason and a Shriner. He was a member of the Congregational church, president of the Union Mission, a member of the Rotary and Blennerhasset clubs and the chamber of commerce.

Sloan Killed, Texaco Plane Wrecked

HOUSTON, Jan. 3.—Two airplane accidents resulted in the death of a leading west Texas oil operator and the virtual destruction of the widely known "Texaco No. 1" machine at the turn of the new year.

Sam W. Sloan of Midland, formerly of Tulsa, was killed in a fall of his airplane at the Colorado, Texas, country club, Dec. 30. The "Texaco No. 1" plane was wrecked, probably beyond repair, in taking off in a fog at Floresville, Texas, Dec. 29, after a stop on its way to El Paso.

Mr. Sloan, who was a wartime aviator, was the co-discoverer with Steve S. Owen of Tulsa of the shallow Chalk pool, which preceded Settles-Roberts deep lime development in Howard and Glasscock counties, Texas. He was a member of the 239th Aero Squadron in wartime.

No decision has been reached by The Texas Co. as to whether the engines of the tri-motored Ford-Stout plane wrecked at Floresville will be used for rebuilding another machine or whether a replacement plane will be purchased.

27 Wells to Drill at Oklahoma City

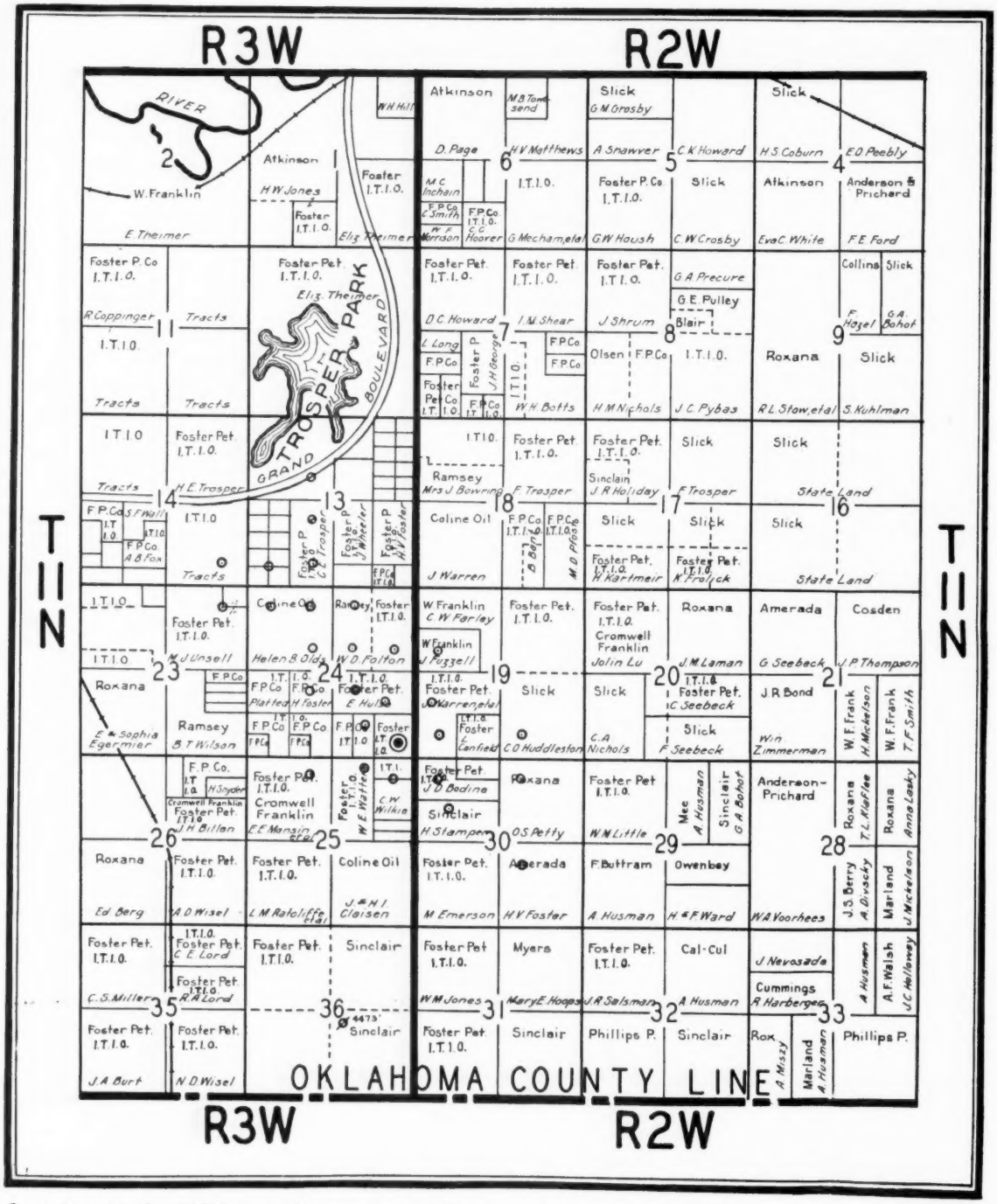
OKLAHOMA CITY, Jan. 5

SPURRED on by the consistent production of the Indian Territory Illuminating Oil Co.-Foster Petroleum Corp. discovery well, operators of the Oklahoma City district are preparing to engage in an active drilling campaign.

When all the locations which were decided on at an operators' meeting held in Oklahoma City Jan. 3, become active, there will be 27 wells drilling in the vicinity of the recent strike.

Efforts on the part of the more conservative operators to keep all locations on one well to a 40-acre basis were unavailing, the rest of the leaseholders being of the opinion that one well to 10 acres in a region which has as many productive possibilities as this one, plus the pay at the 6400-foot level, is the proper basis. Of the 27 drilling wells which are now, or soon will be, under way, 17 are located on the 10 acres per well basis, with the remaining number on the one well to 40 acres plan.

Of principal interest to many in the district is the I.T.I.O.-Foster Pe-



Operators in the Oklahoma City area are adding several wells to the total now drilling. When all the new wells spud in, which will be as soon as possible, there will be a total of 27 drilling in the field. But little more than a third of this number are located on the one well to 40 acres spacing plan. Map shows the scope of the campaign. The well in the circle is the discovery.

troleum Corp. No. 1 Trosper, in the center of the SE NW of 13-11N-3W, which has topped the upper gas sand encountered in the discovery well, and in which 11¾-inch casing is being run to test this horizon. The No. 1 Trosper had this sand at 3971 feet, 22 feet lower structurally than the same formation in the discovery well. Two cores have been taken, putting the total depth at 3986 feet. The first core, from 3971 to 3979 feet, showed some gas, oil, and the slightest trace of water. The second core is reported to show a heavier saturation of oil. This same sand had about 30 million cubic feet of gas per day in the first well.

There are many who believe that the two gas sands found in the I.T.I.O.-Foster discovery well will prove highly productive of oil when found a little lower structurally than encountered in the first well. The second gas sand, said to be in the Layton series, was more than 100 feet thick, and carried with it nearly 50 million feet of gas, as well as showing a complete oil saturation. Unless the break between the two sands thickens, the Trosper location should pick up the second sand around 4975 feet.

Argument over the identity of the producing formation in the discovery well has arisen again. Called first the Simpson, then the Hunton, the pay formation has been knocked around from pillar to post in search of a name. And now to complicate matters, there are some who are casting their votes for the Arbuckle lime. If the latter is true, then there is no Wilcox sand present, which would mean that the entire section has disappeared in a distance of seven miles.

It was encountered in the deep well drilled by the Cromwell Oil & Gas Co. that distance north and west of the new well. But whatever the pay formation is, it is doing an elegant job of producing. Holding steadily in excess of 5500 barrels of 37 gravity oil daily, it is cause enough for the excitement it has aroused among the oil operators and citizens of Oklahoma City alike.

Whatever effect the opening of this pool will have on the crude market will be purely psychological for nearly six months, as it will take that long for the wells to reach the present big pay.

Correction

The statement on page 28 of the Jan. 2 issue in the article about the fire at the Carnegie Refining Co., Pittsburgh, in which Myron Evans was credited with being general manager of the Carnegie plant was in error. J. Earl French is with the Carnegie Refining Co., and made the statement; Mr. Evans is with the Island Petroleum Co., Pittsburgh.

West Texas Refineries Included In Statistics of Operations

Staff Special—By Telegraph

TULSA, Jan. 8

BEGINNING with this issue NATIONAL PETROLEUM NEWS is enlarging its statistical service covering refinery operations in the southwest by the addition of a report on the operations of a group of refineries in the newly developed west Texas refining district. The report will be a regular feature of the weekly statistical summary which has been gathered by this publication since November, 1924.

For the initial report on West Texas operating data for the week ended Jan. 4 have been obtained from 10 refineries with an aggregate still capacity of 59,500 barrels of crude oil a day. This represents approximately 66 per cent of the total refining capacity of west Texas which is now completed and in operation. In the remainder of the Mid-Continent district the NATIONAL PETROLEUM NEWS weekly report covers approximately 60 per cent of the operating capacity.

In the week ended Jan. 4 the 10 west Texas plants charged an average of 32,961 barrels of crude oil to their stills each day. They were operating at 55.5 per cent of their crude capacity.

Production of gasoline totaled 2,463,000 gallons from the total 230,727 barrels of crude oil charged to stills. The gasoline yield was 25.42 per cent.

The 10 west Texas refiners shipped 2,586,000 gallons of gasoline, thus reducing their stocks 123,000 gallons to 7,067,000 gallons.

At the rate of shipments covered by this report the stock of gasoline in west Texas represented about 19 days' supply Jan. 4. This is not far out of line with the remainder of the Mid-Continent field at this season.

The west Texas group produced 5,821,000 gallons of fuel oil during the week, a yield of 60 per cent from the crude charge to stills. Shipments of fuel were almost as large as production, totaling 5,816,000 gallons. Kerosene and stove distillate are minor items in the yield at west Texas refineries.

Gas oil production totaled 1,126,000 gallons and stocks at the close of the week were 9,682,000 gallons, an increase of 964,000 gallons during the week. The yield of gas oil was 11.62 per cent of the total charge of crude oil to stills. Fuel oil and gas oil together accounted for 71.62 per cent of the crude charged.

Detailed figures on the operations of the 10 west Texas refineries the week ended Jan. 4 are in the regular refinery statistical section beginning on page 110.

Index to Coming Meetings

Oklahoma Oil Jobbers Association, Oklahoma City, Okla., Jan. 24, 25.

Wisconsin Petroleum Association: Park Hotel, Madison, Jan. 16 and Feb. 13; Schroeder Hotel, Milwaukee, March 13 and Apr. 10; Beaumont Hotel, Green Bay, May 15.

North Dakota Petroleum Association, Elks Club, Fargo, N. D., Feb. 1.

American Oil Men's Association, Congress Hotel, Chicago, Feb. 12, 13, 14.

Ohio Petroleum Marketers Association, Hotel Statler, Cleveland, O., Feb. 13, 14, 15.

Iowa Independent Oil Men's Association, Fort Des Moines Hotel, Des Moines, Ia., Feb. 19, 20.

Illinois Petroleum Marketers Association, Pere Marquette Hotel, Peoria, Ill., Feb. 27 and 28.

Pennsylvania Independent Oil Men's Association, Harrisburg, Pa., week of March 3. Exact dates to be announced later.

Michigan Oil Men's Association, Statler Hotel, Detroit, March 7, 8.

Western Petroleum Refiners Association, Jefferson Hotel, St. Louis, Mo., March 12.

American Association of Petroleum Geologists, Fort Worth, March 21, 22, 23.

Minnesota Petroleum Association, Radisson hotel, Minneapolis, Apr. 3, 4.

American Oil Burner Association, Hotel Pennsylvania, New York City, Apr. 9, 10, 11.

Review of Late Production News

AN EVEN 10,000-barrel increase in daily average production occurred in the country during the week ended Jan. 5 when output totaled 2,591,050 barrels daily, according to American Petroleum Institute.

Total new crude supply hovered near the 3,000,000 barrel mark when imports gained 154,857 barrels, amounting to 354,571 barrels daily average. This brought total new supply to 2,945,621 barrels the past week, as compared with new supply of 2,780,764 barrels week ended Dec. 29.

Santa Fe Springs contributed the largest increase in production. That field gained 12,500 barrels on daily average. Long Beach fell off 3000 barrels, and with other minor decreases in California, that state's total output gained only 5700 barrels daily for the week.

Seminole area continued its downward trend, daily average production falling off 5900 barrels, total of 251,050 barrels. Bowlegs field decreased 3000 barrels, the largest decrease in that area.

Winkler county production increased 5500 barrels and Salt Creek 4400 barrels on daily average.

Oklahoma-Kansas

THE outstanding development in the Mid-Continent the past week was the announcement by the Prairie Pipe Line Co., it would increase by 20,000 barrels its daily capacity on trunk lines to the Chicago territory. Loops of eight and 12-inch pipe and an increase in pumping station equipment will be started at once. The move means an increase in shipments to Chicago plants at the Sinclair Refining Co. and Standard Oil Co. of Indiana and other plants farther east.

Field developments were routine except for another well in Sedgwick County, Kans., in the new field north of Wichita. This well proving an extension of three-quarters of a mile. Pipe line construction to this territory announced included lines by the Prairie Pipe Line Co., and a joint project by the Skelly Oil Co., and the White Eagle Oil and Refining Co.

California

ACTUAL construction of the 287-mile gas pipe line from southern California will average around 700,000 barrels throughout 1929. There is real need to shut in more heavy oil production to hold down stocks of heavy crude and fuel oils. Santa Fe Springs probably will reach a peak of some 200,000 barrels by Feb. 1 and then steadily decline to around 100,000 barrels by June. Long Beach is now producing better than 180,000 barrels daily, with indications that this field will average better than 150,000 barrels throughout the year.

New production from nine wells at Long Beach last week was almost 5000 barrels, almost holding the field production steady. Santa Fe Springs furnished nine new wells with a total flush production of about 40,000 barrels. In spite of this large production, the field did not show an increase.

Three Santa Fe Springs wells went dead or were killed last week, all making considerable water and emulsion. Seven new wells are due in this week and 46 within two weeks, including the seven. Total of 222 wells are actively drilling in the field. The 38 deep zone producers are flowing at the rate of 2600 barrels average per well, while one month ago a lesser number of deep holes were averaging 3300 barrels to the well.

Upholding of the California acts permitting the drilling of tidewater lands, by the state supreme court, means several wells will be drilled in the edge of the ocean at Rincon and Elwood, where it is thought that the structure runs into the ocean.

Rocky Mountains

IT IS indicated that the daily average production of crude oil in Wyoming into Utah and Idaho will start Feb. 1. Most of the oil and gas field operations in southwestern Wyoming have shut down for the winter. Walter B. Scoville, discoverer of the LaBarge field, has withdrawn from the firm of Scoville Bros. and will henceforth operate under the Walter B. Scoville Co.

Hay Syndicate holdings in the Salt Creek field have been purchased by the Continental Oil Co. for $50,000 cash.

Montana-Dakota Gas Co. of Minneapolis has announced a 200-mile extension to its main line in northeastern Montana. The new extension will serve 26 communities along the right-of-way of the Great Northern railroad.

A good well in an unexpected place in the Kevin-Sunburst field is the Campbell interests' No. 2 Morton, which is good for 750 to 1000 barrels per day in a territory which has previously produced only dry holes.

Texas, New Mexico, Louisiana

FAVORABLE action is expected by the Railroad Commission of Texas soon on a request of Yates field operators to increase Pecos county production from 72,500 to 100,000 barrels daily. The proposed increase would become effective Jan. 16, giving the three prorated fields of West Texas a total outlet of 310,000 barrels daily. The total mentioned includes 175,000 barrels daily from Winkler county and 35,000 barrels daily from the Roberts-Settles deep lime area of Howard and Glasscock counties.

Settled production areas of West Texas, where prorating of production was not found necessary, account for less than 65,000 barrels of crude daily at present. Together with prorated fields these areas are yielding about 375,000 barrels daily in the Permian salt basin region.

Older and more settled areas of the state fluctuate around 375,000 barrels daily, indicating future daily average production of Texas as a whole at 750,000 barrels in the immediate future.

In Lea county, New Mexico, Skelly Oil Co.'s No. 1 Joyner test, in 26-25S-36E, is again flowing by heads of about 70 barrels each at 3287 feet.

Two important completions were made in Gulf Coastal Texas. Humble Oil & Refining Co. extended the Sugarland field, in Fort Bend county, nearly a half mile southeast when it completed its No. 1 Dew Brothers for 1500 barrels daily at 3590 feet. The Sugarland field, also known as De-Walt dome, is controlled in its entirety by Humble. On the south flank of the old Humble field, northeastern Harris county, H. R. Cullen and the West Production Co. completed No. 1 R. B. Morris, in the W. T. Charles survey, for 5280 barrels daily at 5347 feet. The Morris well represents both an extension of the field and the finding of deeper oil than previously known to exist there.

Louisiana operations were of only local importance throughout the week.

The Editors' Viewpoint

National Petroleum News

What Price Business Antiques?

A SURVEY for obsolescent equipment in industry soon will be started by the Department of Commerce at Washington. The official title of the survey will be something about industrial equipment, its life, the frequency and need of replacement, etc. But what it is expected to bring out the most clearly will be the amount of ancient equipment according to the most modern and efficient standards and the extent to which industry is burdening itself with it.

Whether the survey will reach the oil industry is a question. This particular one probably won't as it will be largely preliminary. But it should hold much thoughtful consideration for the oil industry. If it doesn't do anything more than to bring home to American industry, and the oil industry in all its branches, the absolute business necessity of cold bloodedly judging just when a piece of equipment is obsolete, whether it is "worn out" or not, the survey will do great good.

The oil industry has been confronted with this factor of heavy obsolescence for many years and especially in the last few years. This is particularly true of the refining branch where the rapid rush of development of new processes and new products has made the equipment of yesterday useless from a money making standpoint. The producing and marketing divisions have been sufferers—if you may call it that—but not to the extent of the refiners.

Few oil men outside of refiners, and perhaps not all of them, realize the tremendous changes in that branch of the oil industry. Whole refineries, that were modern only a few years ago, have had to be rebuilt, and from all promises, will have to be rebuilt frequently in the future, until the science of hydrocarbon chemistry has reached the millenium.

One important reason for the wide variation in prices of refinery products between refineries has been that one refinery was absolutely modern, another was 90 per cent modern, a third was 85 per cent and so on down the line to zero. This coupled with varying types of crude oils, appearing at new places in the country and abroad in relation to the ever widening market for petroleum and cheaper means of transportation—all have given those in the refining business a hectic time indeed.

It is all very well to say we will put in the most modern and efficient equipment. But what is it? It will take six months or a year to get such a plant equipped and running by which time a new process with a vast number of new operating details thrown in, will appear on the horizon. Shall the refiner start at once to tear down what he has constructed or wait a while and if he waits will some other company get the jump on him and be producing gasoline in larger quantities at a less cost?

A refinery, run by a competent and progressive company is always being rebuilt. Never a day, hardly, but something that is perfectly good, is being replaced by equipment which will help do the job a bit cheaper, or help improve the product.

Mr. Rockefeller, sr., once said on the witness stand years ago that he considered oil the most hazardous of industries. Many laughed, upon viewing his profits. The hazards of the past are not a circumstance to the hazards of the present development of refinery science, and unfortunately the profits have not been anywhere near what they were and sometimes nothing at all. If anything higher profits are needed than in Mr. Rockefeller's time, if the industry is to progress properly. That does not mean higher prices of consequence to the general public.

But undoubtedly there should be higher profits which however should be kept in the business and reinvested in this modern equipment of the ever coming tomorrow. Such financing of growth would be much cheaper in the long run to the public, and much better for the health of the refiners, than sales of stocks and bonds.

But while the refiners may at the present time be taking the brunt of this obsolescence feature due to advancement of the art, the same hazard is present in the other branches of the industry. Every oil man, producer and marketer, should each day be challenging every piece of equipment, every method, even office methods and organization, with the question "Can I get anything that will do it better and cheaper?" And when he finds that thing not hesitate to adopt it. To do this he must have set up on his books, with the money in the bank too by the way, ample reserves against the hazard of progress.

WE HAVE heard a lot of late years about the alleged overbuilt character of the marketing end of the oil business. How much of that, we wonder, may not be due to equipment or stations, that are obsolescent from a standpoint of efficiency of location as well as of the character of equipment and even of management?

Traffic and congestion of population have changed in most cities, greatly in the past ten years. A service station that was good five years ago may be a failure today. Perhaps it still gets enough gallonage so the owner thinks he should not tear it down. But if he undertook to value stations more closely, the way a refiner has to value stills, towers, etc., or a machinery manufacturer value machines, the marketer would tear down the station, taking the loss on it, and put in the money and his time and energy on a site that will be worth while tomorrow and perhaps for a few years to come.

The same questions can be asked regarding tanks, pumps, organization of leases and office equipment in the producing end of the business.

Obsolescence may seem cruel, it may seem far distant at times, but it is one of the most unrelenting factors that business has to contend with. The man who can keep it always in mind and cope with it intelligently, is the only one who can survive, at least with a profit. —W. C. P.

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The Mid-Continent Skyline

By Lawrence E. Smith

Tulsa

THE new year starts with an awakened industry. Events are afoot. The Mid-Continent Oil & Gas Association has addressed itself seriously to the promotion of unit development as a means of regulating development. There is no disposition to lag on the project. If such tendency appears it is the duty of the industry to prod them along.

The American Petroleum Institute hasn't said anything yet, but doubtless it will. The American Bar Association committee has finished its proposed bill for enactment by the state legislatures. Not much discussion has been had on this. Frank Phillips took the lead on New Year's day with a declaration that legislation is needed.

All these doings are significant. Unit development is the one thing on which the oil industry has reached some semblance of agreement. The term still needs clarification. To some it means something akin to forcible seizure of property and domination of little companies by big ones.

Our idea of the term is that it is an elastic one, meaning generally any plan for the operation of a pool in accordance with a definite plan drawn up by the owners and tending to reduce dissipation of gas energy, increase the total amount of oil to be taken from the pool and eliminate wasteful competition. It need not always take the form of pooling acreage —swapping interests in each others' property.

In this stage of the industry's struggle toward sounder policies, there are only two times in the life of a pool when pooling of properties is possible. One is when the area so treated is in the wildcat stage, before varying lease values have been established by drilling. The other is when the field is ready for the junk man. We have had instances of both. Structure is not a reliable guide, ordinarily, to worth of wildcat acreage and it is fairly simple to get up an acreage trading agreement, with each operator taking an undivided interest in every other operator's lease. They all start even and, as D. J. Moran pointed out in a statement to NATIONAL PETROLEUM NEWS last week, the spirit of hedging which prevails leads naturally to such trading.

After the field is partly developed and each operator has had a look at his hole card, it is nearly impossible to agree on a basis for trading. A group of altruists, or passionate addicts to efficiency for efficiency's sake, might do it, but hard-headed business men will not. At the final stage of a field's production, when the properties are all losing money and only a comprehensive plan of operation, including repressuring, will turn the liabilities into assets, the trading basis is not difficult to establish. Such a condition obtained in the well known Delaware extension pool of Nowata county, Okla.

The settling up of agreements in advance of development is constructive and, in time, will make for orderly exploitation of oil fields in accordance with demand. No more important work could be undertaken by the Mid-Continent Oil & Gas Association, the American Petroleum Institute and all other producers' associations.

* * *

Tulsa has had its first taste of ice hockey. A huge coliseum has been built and it was formally dedicated to hockey and skating on New Year's night. In this country indoor skating is the only kind that can be practiced, for the ice that forms on ponds and rivers is quite unreliable.

After several years of operating in various states, Walter Daly, of Cleveland, O., has concentrated his efforts on western Kentucky. The Owensboro district is giving him a good run for his money, as it is a number of others. Mr. Daly is a son of the late Martin B. Daly, long the president of the East Ohio Gas Co.

* * *

As guessed in these columns early in December, Ernest J. Nicklos has joined the Marland Oil Co. He resigned as division superintendent of The Texas Co. during the Chicago meeting of the American Petroleum Institute and his resignation was effective Dec. 27.

He is now vice-president and director of the Marland Production Co. Charles C. Brown resigned from those posts. Mr. Brown remains a vice-president and director of the parent Marland Oil Co. The association and close friendship between Mr. Nicklos and D. J. Moran, president of the Marland, has existed for several years, so when Mr. Nicklos resigned from The Texas Co., without announcing his plans, guessing was easy.

His family will stay in Tulsa until the close of the school year, Mr. Nicklos commuting week-ends. Some of these trips will be made by airplane, to which form of travel he is a close addict.

* * *

L. M. Tidd, who has had charge of the Bartlesville store for the Continental Supply Co., has been transferred to St. Louis as assistant to Brooks Gutelius, recently elected vice-president, and moved from Tulsa. Mr. Tidd has been one of Washington county's most active citizens. He was Republican county chairman in 1928 and in 1927 was county commander of the American Legion.

* * *

G. A. Tompson, purchasing agent of the Empire Companies, at Bartlesville, has had the stores department added to his duties. The two departments have been consolidated. The warehouse system of the companies includes 11 main warehouses and 59 lease stocks in Kansas, Oklahoma and Texas. C. R. Fries, chief clerk of stores department, becomes chief clerk of the combined departments; F. H. Griffin, storekeeper at the Pampa, Tex., warehouse, was made traveling storekeeper with Bartlesville head-

quarters, and A. S. Hughes, stock auditor, becomes storekeeper at Pampa.

* * *

John J. Flanagan, superintendent of operations for the Continental Oil Co.'s northern Rocky Mountain district, with headquarters at Casper, has been transferred to California to have charge of Continental's field work. He has seen service with several companies in many fields, starting with the Ohio Oil Co. in the Lima field. He went to Wyoming for The Texas Co. in the early days of the Big Muddy field and about two years ago joined the Continental.

* * *

W. L. Connelly, recently vice-president and general manager of the Mammoth Oil Co., has been made president of the Venezuelan Petroleum Co. The Sinclair interests recently merged their holdings in Venezuela with those of Venezuelan Petroleum, a Kunhardt organization, with Sinclair controlling. H. R. Kunhardt, Jr., who was president, is now chairman of the board. J. Fletcher Farrell has been elected vice-president and treasurer; P. W. Thirtle, vice-president and comptroller; W. B. Heroy and W. S. Mowris, vice-presidents and A. Steinmetz, secretary.

* * *

R. G. Strong, pipe line construction engineer of the Empire Oil & Pipe Line Co., has been transferred to the Texas-Empire Line Co., which will build the jointly owned Empire and Texas line from the Mid-Continent to Chicago. Mr. Strong will be assistant to F. A. Stivers, general superintendent in charge of construction and operation of the new company.

* * *

The Oregon Basin, Wyo., field price fuss has gotten into court through The Texas Co. A nice case is set up. Regulations of the department of the interior require, or appear to require, approval of sales contracts on oil and gas by the department. The Texas Co. gets into the dispute because it has a contract with the Cody Petroleum Co. to buy 1000 barrels of oil per day at 53 cents per barrel, this being low gravity crude. The department seeks to collect 85 cents per barrel for its royalty oil. Inferentially, it would refuse to permit other oil from being sold below this price. The Texas Co. is suing in the supreme court of the District of Columbia for injunction to prevent the department from regulating prices on anything except the government royalty oil.

Oklahoma City Wildcat Crude Is High Grade Oil

FOLLOWING is an analysis, made by the Hempel method, of the crude oil produced by the Indian Territory Illuminating Oil Co.—Foster Petroleum Corp. wildcat near Oklahoma City. This is the deep well which came in Dec. 4, producing in excess of 5000 barrels daily from the Hunton lime at a depth of more than 6400 feet, and opening what many expect will be one of the state's largest fields.

The analysis, made by the Bartlesville station of the U. S. Bureau of Mines, shows that it is in many respects, a remarkably good oil. It is said to be superior in its content of non-viscous lubricating oil, as well as in the content of medium lubricating oil. Its sulfur content is less than that of many of the major producing fields of Oklahoma, although its percentage of loss is somewhat higher. Analyses of crudes from other fields are given for purposes of comparison:

	% OKLA. CITY	Gr.	% SEMINOLE	Gr.	% BURBANK	Gr.	% PENNSYLVANIA	Gr.	% CUSHING	Gr.
Light Gasoline	6.7	74.2	11.5	75.1	8.5	72.0	4.8	63.0	8.6	73.8
Total Gasoline	26.1	60.5	36.9	60.1	29.7	57.7	24.4	54.0	37.5	58.4
Kerosene	16.8	43.2	8.1	42.5	11.0	41.8	16.4	42.6	12.4	52.5
Gas Oil	10.0	38.2	15.2	35.6	14.0	36.6	14.6	38.9	15.8	35.4
Non-Vis Lubricating Oil	12.0	34.2	9.4	29.3	11.5	30.8	11.3	34.6	9.2	30.4
Medium Lubricating Oil	6.7	30.9	6.5	25.8	7.1	26.4	5.9	30.9	6.4	25.8
Viscous Lub. Oil	0	0	0	0	1.3	24.0	.....	.....	.....	.....
Residuum	24.4	21.6	22.6	16.8	24.0	23.1	26.0	.....	17.0	.....
Loss	4.0	.....	1.3	.....	1.4	.....	1.4	.....	1.7	.....
Carbon Residue	3.9	.....	7.1	.....	6.2	.....	2.0	.....	6.8	.....
% Sulphur	0.16	.....	0.30	.....	0.32	.....	.08	.....	.28	.....
Gravity	.....	37.6	.....	38.7	.....	37.3	.....	38.3	.....	39.1

Carney Goes to New Shell Development Co.

S. C. Carney
Who takes new position with Shell Development Co.

TULSA, Jan. 5.—S. C. Carney of the Shell Petroleum Corp., has been transferred to the Staff of the Shell Development Co., a recently organized research corporation of the Shell group. He is leaving at once for Oakland, Calif., to undertake the new work.

Mr. Carney has been recognized for a number of years as one of the leaders in the natural gasoline industry of the country. As head of the Shell's gasoline plant operations in the Mid-Continent field he became well known to the industry. Recently he has been doing research work in the Mid-Continent.

In recognition of his services to the industry Mr. Carney was made a vice president of the Natural Gasoline Association of America two years ago. He was re-elected for a second term at the 1928 convention.

The Shell Development Co. is engaged in research on natural gasoline and refining problems. It is conducted independently from the various Shell operating companies in this country.

The Drillometer Co., Los Angeles, Calif., has published a 24-page book on the Drillometer, a precision weight indicator with compensating links and full floating deflector, which is said to increase speed and reduce hazards in drilling for oil.

The Drillometer gives the exact pressure of the bit on bottom as the difference between the weight indicated with the bit off bottom and the weight shown while drilling. The company claims that wells making record drilling time have used this device, including wells of the Shell Co., the State Co., the Wilshire Oil Co., the Rio Grande Oil Co., and others.

Oakite Products, Inc., 22 Thames St., New York, has appointed A. H. Green as its Tulsa district manager, with headquarters at the Tulsa Storage & Transfer Co. where a stock of Oakite products is maintained. A. J. Ospring is no longer with the Oakite company.

Play Widens in Sedgwick, Kans., Area; Big Well There Shows Water

By Lawrence E. Smith
N. P. N. STAFF WRITER

TULSA, Jan. 5

OVERSHADOWING field developments of the week was the announcement by the Prairie Pipe Line Co. that it will increase its Mid-Continent trunk line outlet to the Chicago district by 20,000 barrels daily.

With the expansion program now being carried on by the Sinclair Pipe Line Co., which is designed to add 30,000 barrels daily to its system from Oklahoma; and the Texas-Empire Pipe Line Co.'s new project, planned to carry initially 25,000 barrels or more daily, it would appear that Mid-Continent crude will not lack market outlets.

Of course these new lines will not be ready to operate for several months, except that of Sinclair, and as the middle of February will see the production of the Mission pool released, a fair amount of oil will go into storage in the next few months. At this time not to exceed 25,000 barrels daily is being stored in Oklahoma and Kansas.

In field developments, the new "play" north of Wichita, in Sedgwick county, Kans., was most interesting of all in the Mid-Continent. The Mary Jane Oil Co. (Hartman & Skaer) No. 1 Fitch, NW SE SW of 6-26S-1E, topped the pay at 3387 feet and was drilled to 3382 feet. It was rated as good for 1000 to 1500 barrels daily.

Its importance lies in the fact that it is three-fourths of a mile north and east of the No. 1 Wright, discovery well of the Valley Center field, brought in last summer by the Marland-Gypsy-Bu-Vi-Bar combination. The Wright well is in the SE NE SE of 12-26S-1W. The new well of the Mary Jane company is southwest about five miles of the No. 1 Goodrich of the Marland Production Co., which was a sensation early in December. The Goodrich well, rated initially at about 7500 barrels, is in the center of the SW quarter of 16-25S-1E. It is producing from a pay found immediately on top of the Mississippi line, and topped at 3015 feet.

Bad news developed late in the week on the Goodrich well. For the 24 hours ended at 7 a.m. Jan. 4, it made 2110 barrels of oil and 140 barrels of water and basic sediment. Its performance will soon determine whether there is to be much of a "play" in this locality.

Away off in the other direction from the discovery well, Logan Van Zandt and D. B. Mason, of Tulsa, have a good showing of oil above the pay formation of both the Wright and Goodrich wells. This well, No. 1 Jones, in the center of the NW SW of 19-25S-1W, six miles west and four miles north of the Wright well, had 600 feet of oil in the hole from 2905-2915 feet. It is drilling ahead.

This territory and the Seminole district are the areas of greatest drilling activity now, if we except the new field just south of Oklahoma City which has not yet gotten its stride. In the Seminole territory there were several significant dry holes finished within the week and a few good producers.

AT THE south tip of the Little River pool, Shell Petroleum Corp. assisted in defining the field by completing its No. 1 Wolfe, NE SE SE of 23-7-6, as a failure. Top Wilcox, 4885, total depth, 4900, 1000 feet of water in the hole.

East of Little River, the wells started as the result of the big well completed a year ago by the Mid-Continent Petroleum Corp., are about all finished. The campaign was delayed several months through agreement, but finally it started. Nobody has anything worth while out of it except the Mid-Continent, whose two wells in 5-7-5 are making around 3500 barrels daily together.

The past week saw the completion of Senator W. B. Pine's north offset to the Mid-Continent's discovery. It is No. 1 Walker, SW SE of 32-8-7, and was a hole full of water with the Wilcox topped at 4751 feet and drilled to 4754 feet. A mile south and a mile and a half east of the Mid-Continent discovery, T. B. Slick, Inc. drilled into the Wilcox in his No. 1 Chilcoat, NW NE of 9-7-7. Top of the sand was at 4617 feet and at three feet in it swabbed about 70 barrels in 24 hours. It is a south offset to a small well drilled by W. R. Ramsey, the west offset to which, Marland Oil Co.'s No. 1 Harris, SE SW of 4-7-7. Topped the Wilcox at 4501 feet, drilled to 4504 and flowed six barrels per hour into the slush pit, no tankage being ready. It stands a chance of being a well when drilled in.

Township 8N-5E continues to hold attention. It will be remembered that, in the NE NW of 14-8-5, Barnsdall Oil Co. more than a year ago brought in its No. 1 Fife well, opening new Wilcox territory and that, on the west side of the township, in 18-8-5, the Pure Oil Co. later discovered the Misener sand to be quite productive. The play spread in several directions from the Pure's well and there is a Wilcox campaign on in the vicinity of the Barnsdall well.

During the last week, the latter didn't fare so well. Gypsy Oil Co.'s No. 1 Mimey, in the NW NE of 14-8-5, an east offset to the Barnsdall discovery, was a hole full of water in the second Wilcox sand, topped at 4585 feet and drilled to 4605 feet. It had earlier been conceded to be a failure, but the operator carried it on down to see whether this second break, occasionally productive, held anything. Then the same company, drilling its test in the NE SW NW of 14-8-5, a quarter mile southwest of the discovery, topped the Wilcox at 4432 feet and, at two feet in, developed 300 feet of water.

Several Misener sand completions were had, without adding to or condemning territory.

IN THE St. Louis pool of Pottawatomie county, which is clicking along at around 100,000 barrels daily from the Wilcox sand wells, the No. 1 Davis well of T. B. Slick, Inc., brought in two weeks ago, has caused something of a campaign to start. This well is in the SW NW NE of 18-7-5, one and a quarter miles north of the north end of previous big production. Slick's well is making better than 5000 barrels daily. Some 13 wells are being started in the immediate vicinity, principally north and west of the discovery.

Notes on the Week

Prairie Pipe Line Co. reports deliveries of 5,985,265.67 barrels in December, or 193,073 barrels daily. This is a gain over the November daily average of gain 182,052 barrels daily.

* * *

Sinclair Pipe Line Co.'s deliveries in December totaled 3,456,000 bar-

rels and in November, 3,211,700 barrels.

* * *

The price advance predicters have in a body, taken to the brush where they may be seen peeping furtively at folks who are wishful of collecting bets on the subject.

* * *

Amerada Petroleum Corp. has contracted to deliver 270,000 barrels of Seminole crude to the British-American Oil Co., of Toronto, Canada, at the rate of 2500 barrels daily.

* * *

Lario Oil & Gas Co.'s No. 1 Stalnaker, NW NE of 14-29N-1E, near the Kansas line in Kay county, Okla., is a hole full of water in the Wilcox sand at 3868-76 feet. It is northeast of the old Dilworth pool and was an outstanding test of northern Oklahoma.

* * *

The important Misener sand test of Slick and White Eagle Oil & Refining Co., in the NW SE of 20-8-5, about three-quarters of a mile southeast of Misener sand production, topped the Misener at 4265 feet and swabbed 100 barrels in three hours. Upon completion it is expected to show to much better advantage. It is the outstanding Misener test of this field, constituting as it does an important extension and proving the existence of the sand in that direction.

A.P.I. Binds Proceedings In Book Form

NEW YORK, Jan. 7.—Addresses and papers delivered at the ninth annual meeting of the American Petroleum Institute at Chicago in December are being published now in book form. This year the proceedings will be printed in three sections, the first section to contain all papers delivered at the marketing sessions, together with discussions at group sessions.

Section two will contain all papers and discussions at the group sessions on refinery technology and section three on production and development and production engineering.

Members will receive their copies without charge. Additional copies of each section of the proceedings will cost 50 cents per copy.

LOS ANGELES, Jan. 3.—Herbert L. Eggleston, formerly in charge of the natural gasoline department of the Pan American Petroleum Co., was recently appointed manager of refinery and gas operations of the Gilmore Oil Co. Mr. Eggleston is a charter member of the California Natural Gasoline Association and has been prominent in natural gasoline and refining circles for several years in California.

Sign Up for Repressuring Plan At Santa Fe Springs

LOS ANGELES, Jan. 5

IT IS indicated that the plan to take gas from the deeper zones at Santa Fe Springs and repressure the upper partially depleted oil sands will be put into actual practice, according to reports made by members of the Committee of Fifteen at a meeting in Los Angeles Jan. 4. Herbert R. MacMillan presided as chairman.

This committee also has charge of the movement to secure promises and agreements of the various operators with production in the deeper zones to pinch their wells, in the interests of conservation.

But efforts are principally centering on the repressuring movement. The efforts to bring about agreement to pinch in the wells in the deeper zones is making practically no headway, due to indications that the big flush production will not continue more than two or three months.

The repressuring plan called for the organization of the Santa Fe Springs Gas Conservation Association, which is to be a non-profit corporation. The membership fee "shall be the proportion of the investment fund that the member's rated Meyer zone production of oil bears to the total rated production of oil of all members from the Meyer zone."

It was found that operators controlling close to 80 per cent of the total Meyer zone production had either signed up, or were willing to sign up, leaving only slightly more than 5 per cent which it is yet believed possible to secure.

Due to indications that the Santa Fe Springs production will reach a peak production of only about 200,000 barrels daily by Feb. 1 and that the production from that date will show a steady and fairly sharp decline, it is generally felt that other conservation measures will not be necessary.

When the conservation movement was started, which included the pinching in of wells, it was thought that the peak of production would be better than 300,000 barrels by Feb. 15 and that the daily production of the field would hold above 200,000 barrels for months. Many new wells have shown rather sharp declines and many are showing water. Three wells either died or were killed during the past week.

It is generally felt that conservation should be applied to Long Beach, rather than Santa Fe Springs, as it is now indicated that the production at Long Beach will hold well above 150,000 barrels most if not all of this year. But Long Beach is a townlot field and there is not thought to be any chance of the operators reaching an agreement to such an end.

Bell Heads Personnel Work of Humble

Judge H. E. Bell

HOUSTON, Jan. 5.—Judge H. E. Bell of Abilene, formerly chief supervisor of the oil and gas bureau, Railroad Commission of Texas, and more recently vice president of the Moutray Oil Co., has assumed his new duties as head of personnel work for the Humble Oil & Refining Co., Houston.

The company's announcement of Judge Bell's new position says "his experience makes him an ideal man for such contact and its responsibilities. In this position he is an intermediary between the employes and the management; and the management hopes through Mr. Bell to maintain a closer contact with the individual employes in order that they may continue to have that family spirit which has been characteristic of the Humble organization."

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IT has long been known by chemists and engineers that the finer and less angular the graphite particles of any cast iron, the stronger will be the metal itself.

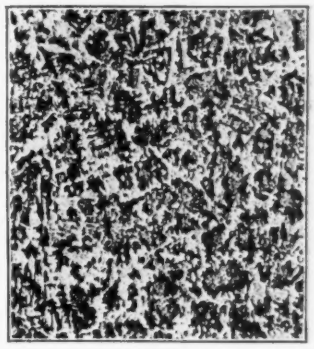
A direct comparison of the micrographs shown here will explain very clearly why deLavaud is mechanically superior to any other cast iron pipe.

The illustration at the left shows a cross-section of a piece of ordinary cast iron pipe magnified 100 times. Upon close examination we find that the continuity of the mass is broken up by extremely long flakes of coarse graphite.

Now observe the micrograph of the deLavaud Pipe shown at the right. Note the smallness of the graphite masses and the fine even texture of the metal. This density and the uniformity of grain structure give deLavaud pipe a tensile strength of more than 30,000 lbs. per square inch.

Indeed, exhaustive laboratory and factory tests have proved that deLavaud Cast Iron Pipe is 25% stronger than pipe cast by any other method.

Sand Cast Pipe. Micrograph showing center of wall cross-section. Magnification 100 times. Note the long flakes of brittle graphite.



Cross-Section of deLavaud Pipe at center of wall. Magnification 100 times. Observe the even grain and the finely divided condition of the graphite.

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Our Industry—A Page of Facts and Personalities

By Paul Wagner

National Petroleum News

Houston, Texas

How little things may mark the effective operation of an organization was disclosed the other day in a conversation with a veteran of the producing industry.

H. A. Melat, manager of the Gulf Production Co.'s operations out of Fort Worth, was telling of the influence of habit on individuals. A lease foreman may travel the same path day after day across a property. When Mr. Melat, or one of his assistants, visits that property he will view it from different angles of approach, perhaps two or three.

Out of such visits will frequently come ideas or suggestions that never occurred to the lease foreman, or which in his more limited experience failed to have the greater significance sensed by his superiors. One of the secrets of operating success, Mr. Melat thinks, is taking up the slack regularly and keeping a close check on the little things.

A discarded piece of equipment idle on an individual lease may mean only a few dollars, of little importance in the general scheme of things; but the spread of such material over all properties of a company in a year's time might very well represent a hundred thousand dollars, or more, in salvage value. In the broader picture, what seems unimportant may represent the difference between a profit and a loss.

* * *

Arthur Proudfoot, formerly drilling superintendent for the Huasteca Petroleum Co., arm of the Pan American group in the Tampico district, will sail for Maracaibo in January after a holiday visit in the United States. He will be connected with operations of the Lago Petroleum Corp. in Venezuela.

* * *

Roy Holloman is now in charge of geological explorations for the Araucana Corp., with South American offices at Punta Arenas, Chile. He was formerly associated with Dean E. Winchester, at Denver, in Rocky Mountain work.

* * *

The Montex Oil Co., recently organized at Cincinnati, is the latest entry into west Texas operations. C. S. Kaufman of Cincinnati is president. Operating offices probably will be opened at San Angelo, according to Harry Adams, west Texas drilling contractor.

Kenneth A. Johnston is now connected with the geological department of The Texas Co., at Los Angeles. He was formerly employed by the Midwest Refining Co., in Rocky Mountain territory.

* * *

F. J. Omo, in charge of New York sales offices of the Texas Pacific Coal & Oil Co., has returned to the east after a holiday visit to relatives at Houston and a stop at Fort Worth executive headquarters of the company.

* * *

J. P. (Jack) Shannon, production head of the Snowden-McSweeney Co., who maintains headquarters at Fort Worth, has been sending regulation shillalahs back to his friends from Ireland, where he visited through the holidays. One of "the gang" at Fort Worth commented on receipt of his that Shannon must be preparing for a real Irish shindig on his return.

L. E. Delcuze

Readers are invited to look well at the accompanying picture of L. E. Delcuze, executive assistant in the Houston offices of the Gulf Production Co. They may never see another published. Delcuze has the reputation of being the most "picture shy" individual in south Texas. He is proud of his golfing prowess, however, so "fell" for a snapshot while all togged out to play.

Mr. Delcuze reached his present position by way of the accounting department, which he headed for years prior to assuming executive duties.

A. B. Patterson, long identified with production affairs of The Texas Co., in the southwest and Rocky Mountain territories, will be in charge hereafter of field development in the South Louisiana district. His company recently contracted to drill 36 test wells on nine salt dome prospects acquired from the Louisiana Land & Exploration Co. Mr. Patterson, who had been recently in charge of Rocky Mountain field work of The Texas Production Co., Denver, will make headquarters at Lafayette, La. He will work with R. C. Stewart, division manager of The Texas Co., at Shreveport.

* * *

C. A. Bradley has bought an interest in the Adams Drilling Co., San Angelo, thereby joining forces again with Harry Adams. Messrs. Bradley and Adams drilled together in Wyoming before moving to Texas. The firm name is to be changed to the Harry Adams Co.

* * *

A. L. Selig, chief geologist of the Southern Crude Oil Purchasing Co., arm of the Pan American group, now makes his headquarters at Fort Worth, where general offices recently were moved from Shreveport.

* * *

R. L. Tilton, now of the Waggoner Refining Co., at Electra, Texas, formerly was employed in the accounting department of the Transcontinental Petroleum Co., subsidiary of the Standard of New Jersey, at Tampico.

* * *

R. B. Newcombe of the Michigan state geological survey is performing the duties at Muskegon that previously came under Beverly H. Tucker, oil and gas supervisor, who recently resigned. Mr. Tucker's successor has not been officially named.

* * *

Friends of J. Elmer Thomas, petroleum geologist, Fort Worth, now associated with Fenner & Beane, received holiday greetings in the form of an etching portraying a scene in the Yates field, Pecos county, Texas. The etching was made by his father-in-law, Lee Sturges, president of the Continental Can Co., Chicago, who is one of the best known artists in the country.

* * *

R. L. Heaton, geologist of the Marland Production Co., was transferred to Ponca City, Okla., headquarters when the company's Denver offices were recently closed.

W. B. Royer

W. B. Royer, who has been stationed at Midland for the Tidal Oil Co. of Texas, will be in charge of land and leasing work out of the newly established Abilene offices. W. T. Hoey, formerly of the Cisco district office, will handle geological work at Abilene. Both Mr. Royer and Mr. Hoey are widely known in central and west Texas territory, working under James H. Jenkins, vice president, at Forth Worth.

* * *

A. G. Evans-Lombe is now drilling and production superintendent of the Superior Oil Production Co., subsidiary of the Superior Oil Corp., and will make his headquarters at Cisco, Texas. J. W. Redford, field foreman for Howard county operations, is at Big Spring. Mr. Evans-Lombe was formerly superintendent for the Moody Corp., whose Howard county properties the Superior recently acquired.

* * *

J. J. Flanagan has been transferred to California by the Continental Oil Co., Denver, to take charge of Pacific Coast operations. Formerly he was general superintendent of the Continental's northern division, in Rocky Mountain territory.

* * *

Back in the days that preceded the discovery and development of the general Ranger territory, The Texas Co. took up a "blanket" of Stephens county leaseholds at bonuses of less than a dollar an acre. To avoid unnecessary expenditure in case the leaseholds proved valueless, the company did not require abstracts of title unless ownerships were palpably in question.

In the case at point, however, leaseholds became immensely valuable and some $60,000 was spent bringing abstracts down to date. In the natural course of development, included leaseholds were proved or disproved for oil. Some of the disproved properties were eventually surrendered and others were transferred under The Texas Co.'s retrenchment program of 1920-1921.

Abstracts for which the company had no further use were sold to fee landowners, or they may be still obtained through D. O. Bayless of the land department at the Fort Worth division offices. Charge is made for such abstracts as may be available at a much lower cost than would be required in having full new abstracts made, individual conditions applying to sales. The practice shows how, by careful planning, an oil company can avoid unnecessary expenditures and how, after they have become necessary, salvage methods may be later employed.

* * *

J. E. Schroeder, foreign trade representative of the Hughes Tool Co., Houston, is on his way to South America for a six months' business trip. He has visited many other foreign oil regions in the last year. Before joining the Hughes organization, Mr. Schroeder was identified with The Texas Co.

* * *

The Southwest Elevation Co., which specializes in supplying civil engineering data in west Texas territory, has opened a district office at Abilene. Robert Burling, one of the organizers of the company at Midland headquarters, is in charge of Abilene district field work. E. T. Oxford is Abilene office manager. Another district office is located at Carlsbad, New Mexico.

* * *

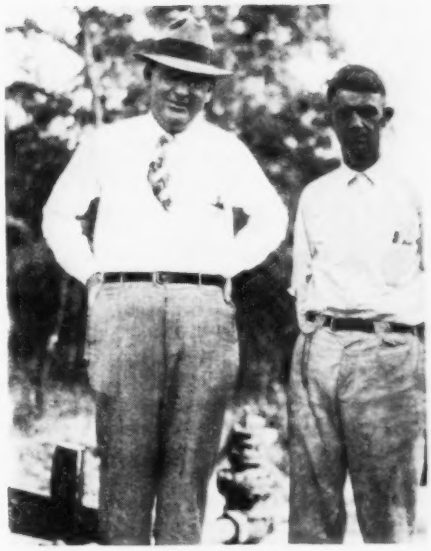
G. Guy Miller is geologist for the Pecos Valley Oil Co., which recently drilled an oil discovery well about 20 miles northeast of Fort Stockton, in northern Pecos county, on fee land in Sec. 22, H&TC block 10. The well has now increased its flow of 36.3 A. P. I. gravity oil to an average slightly exceeding 100 barrels daily at depth of 1626-1628 feet.

* * *

Tom Devanney has been transferred from the machine shop office of the Magnolia Petroleum Co., at Yale, Okla., under Supt. Joe Kuhn, to Wewoka, where he is now chief clerk and cost accountant under Supt. G. E. Holder.

* * *

L. K. Eastman of Bartlesville and A. L. Krueger of Breckenridge have joined the west Texas organization of the Phillips Petroleum Co., at San Angelo, succeeding W. C. Barnett, land department, and Kenneth Hartman, scout, who resigned. Mr. Barnett returns to the practice of law at Big Spring, Texas. Mr. Hartman will represent the Amerada Petroleum Corp., at Roswell, New Mexico.



M. Manning and M. E. Standefer

M. (Bink) Manning, shown at the left of the picture, is Gulf Coastal general superintendent of the Humble Oil & Refining Co.'s drilling and development operations, assisting Walter W. Fondren, vice-president in charge of that territory.

At the right is shown M. E. Standefer, Goose Creek field superintendent. The picture was taken at a deep test drilled by the Humble on its Simms-Sweet property at Goose Creek.

* * *

Two new district sales managers for Ohio territory have been announced by the Louisiana Oil Refining Corp., Shreveport. Horace G. Ridley, formerly in charge of tank car sales, succeeds R. C. France, now assistant manager of the Ohio division. G. S. Dill, formerly Cincinnati agent, succeeds L. E. Alfred, also made an Ohio division assistant manager.

* * *

The sale of the Grayburg Oil Co., San Antonio, to a subsidiary of the American Controlled Oil Fields, Ltd., known as the Indiana Oil & Gas Co., calls attention to the operating career of Dr. F. L. Thomson, for 10 years president of the Grayburg. Dr. Thomson organized the Grayburg in 1918 to operate in the shallow sand fields of Bexar and Atascosa counties, afterwards building a refinery at San Antonio. Later, he expanded into other southwestern territory, building up properties for which the new owners agreed to pay several millions of dollars. Besides his oil activities, Dr. Thomson is treasurer of the state Republican organization in Texas. The American Controlled Oil Fields, Inc., is headed by Arthur J. Devlin, and the subsidiary Indiana Oil & Gas Co., by S. M. Newton of New York.

* * *

C. V. Lane of the California Co., subsidiary of the Standard Oil Co. of California, is a new member of the Purchasing Agents Association of Dallas.

West Texas to Be Held at 375,000 Barrels, Its 1928 Maximum Output

By Paul Wagner
N. P. N. STAFF WRITER

HOUSTON, Jan. 3

PRODUCTION increases now effective, or proposed, for three prorated fields of West Texas, will not bring daily average exploitation of the Permian salt basin region above the 375,000 barrels maximum attained in 1928.

Declines in settled or semi-settled fields in West Texas, where prorating was not found necessary, are merely being offset by production increases in the prorated districts of Pecos, Winkler and Howard-Glasscock counties.

It is now proposed to increase the Yates field market outlet of Pecos county from 72,500 barrels to 100,000 barrels daily, effective Jan. 16. Winkler county producing territory went on a 175,000-barrels daily maximum basis, Jan. 1, shortly after Howard-Glasscock allowable production had been increased from 30,000 to 35,000 barrels daily.

A total of 284 wells in the Yates field, rated at total open flow capacity of 4,348,191 barrels daily in the prorating period of Jan. 1-15, have been exploited on a basis of 72,500 barrels daily outlet since Aug. 20, when withdrawals were increased from 65,000 barrels.

Decision to ask for the new increase in output from this field was reached at a meeting in Fort Worth, Jan. 3. A public hearing will be held by the Railroad Commission of Texas, probably next week, after which it is believed the request will be granted.

The proposed increase originated with Mid-Kansas Oil & Gas Co., subsidiary of Ohio Oil Co., which operates for the joint account of itself and the Transcontinental Oil Co. in the Yates field. The Mid-Kansas proposes taking through the companion Illinois Pipeline Co., a total of about 40,000 barrels of crude daily from the field, instead of the present 15,000 barrels.

Illinois pipeline has line capacity of about 40,000 barrels south-southeast via its Del Rio tank farm to Lytle station, where it makes connection with the Humble Pipeline Co., to the Gulf Coast at Ingleside, in the Corpus Christi district. No announcement has been made, but it is assumed the Mid-Kansas and Illinois companies plan increasing contract deliveries to the Humble to permit of the proposed enlargement of runs.

Smaller operators, mostly owning edge properties in Yates field, have been demanding increased production allowances since the recent rule of the railroad commission allowing 175,000 barrels maximum withdrawals daily from the Winkler county producing areas. The Winkler increase, effective Jan. 1 but authorized about a month ago, was from 150,000 barrels daily.

The 468 producing wells in the Winkler territory had rated potential production of 2,655,707 barrels daily in the prorating period of Jan. 1-15.

In the Roberts-Settles deep lime territory of Howard and Glasscock counties the permitted production of 35,000 barrels daily compares with less than 45,000 barrels potential.

Under the new Yates field maximum, if allowed, the three prorated fields of West Texas will be permitted to produce 310,000 barrels daily. Other salt basin fields, where prorating practice was not found necessary, account for less than 65,000 barrels present daily production, giving the region as a whole 375,000 barrels daily outlet for the immediate future.

Older and settled Texas fields, which fluctuate only slightly in production, are now yielding about 375,000 barrels daily. These, with the newer salt basin fields, will tend to hold the daily averages for the whole of Texas at about 750,000 barrels daily for some months to come.

Unless prorating allowances are further stepped up in the future, West Texas production may be expected to hold reasonably constant at about the 375,000 barrel level until spring.

Completion of the Atlantic Pipeline Co.'s new transportation system from Midland, West Texas, to the Gulf of Mexico, near Beaumont, will result in this company handling its own crude in the future. Capacity of the line, which goes into full time operation in January, is 35,000 barrels daily.

In the past, part of the Atlantic's crude has been handled to the Gulf Coast through the Magnolia Petroleum Co.'s system and other quantities have been stored at its Midland tank farm. Current shipments hereafter will include both day-to-day production and withdrawals from storage.

TWO other pipelines under construction from West Texas to the Gulf Coast will not be completed before spring. One is the 10-inch system of the Shell Pipeline Co., from McCamey to the Shell Petroleum Corp.'s new refinery, under construction on the Houston ship channel. The other is The Texas Pipeline Co.'s 10-inch and 12-inch system from Monahans, Ward county, to Port Arthur.

When the systems mentioned have been completed West Texas will have outgoing pipeline facilities for about 375,000 barrels of crude daily, plus quantities to be accounted for in railroad tank car shipments and by refineries local to the region. Together, these facilities will afford outlet for about 450,000 barrels of crude by July 1, or sooner.

Tank car shipments may be expected to be reduced to between 35,000 and 45,000 barrels daily by the middle of 1929, because of the pipeline systems permitting a shift to that form of transportation on the part of the Shell and Texas companies.

Individual well completions for the week indicated the future pushing outward of production fronts in various Texas districts, but were of little significance in terms of current development.

In the western part of the Roberts-

The Outlook for Oil From Texas

YATES field allowable production to be increased shortly from 72,500 barrels to 100,000 barrels daily.

Winkler county Jan. 1 was allowed 175,000 barrels daily maximum output.

Howard-Glasscock area is now allowed 35,000 barrels.

Other salt basin areas in West Texas, outside proration, are now producing about 65,000 barrels daily.

Older and settled Texas fields will continue to yield around 375,000 barrels daily.

Total production for the state is to hold at 750,000 barrels daily for the next few months.

Pipe lines, including those now under construction, tank car shipments and local refineries, some now building, will afford an outlet for 450,000 barrels daily of West Texas crude by midyear.

Settles deep lime area of Howard-Glasscock counties, the A-6 W. R. Settles joint test of the Marland Production Co., and the Group 1 Oil Corp., Sec. 6, block 32, swabbed 444 barrels in 12 hours from pay at 2210-2215 feet. It proved for future drilling a large block in the western extension area, where the Henshaw Oil Corp.'s holdings were recently sold to the American Maracaibo Co., headed by Fred H. Wickett, formerly chairman of the board of the Pan American group interests.

Skelly Oil Co.'s Joyner test, in 26-25S-36E, low on the west flank of the subsurface lime ridge extending out of Winkler county, Texas, into Lea county, New Mexico, is again flowing by heads of 70 barrels each at depth of 3287 feet. When completed, it probably will prove the largest well in the southeastern New Mexico division of the Permian salt basin region.

In Gulf Coastal Texas, the No. 1 R. B. Morris test of H. R. Cullen and the West Production Co. is the deepest well on the south flank of the old Humble field, making 5280 barrels daily at 5347 feet. Besides extending the Humble field producing territory the well represents the discovery completion of a new deep horizon.

Humble Oil & Refining Co.'s No. 1 Dew Brothers, in the Sugarland (DeWalt dome) area of Fort Bend county, extended production in a solidly controlled field nearly a half mile to the southeast. It made 1500 barrels daily at 3590 feet.

Kingsbury's Statement On Elk Hills Case

LOS ANGELES, Jan. 5.—Title to Section 36 in Elk Hills of the Standard Oil Co. of California is not affected by the recent Supreme Court decision, according to official announcement by President K. R. Kingsbury of the company. He gives the history of the land in question, and explains the decision only holds that the present Secretary of the Interior may inquire into the title of the land. Mr. Kingsbury's announcement follows:

"The recent decision of the Supreme Court of the United States with respect to Standard Oil Co. on Section 36 in the Elk Hills does not deprive the company of its right or title to the land. The decision determines nothing with respect to the merits of the title.

"The decision concerns a part of a section of land in Naval Reserve No. 1, on which the company has a few small producing wells. The Naval Reserve was established in 1912. The Standard Oil Co. has held the land under patent from the State of California since 1908, or for more than 20 years. In 1916 the land was still unproven and the company offered to donate it to the U. S. Navy, an offer which the Navy declined on the advice of its geologists that the property was worthless for oil. Two years later the company drilled a wildcat well on the land and in January of 1919 discovered oil.

"The Secretary of the Interior in 1921 held that the company had good title to the land because it was not known mineral land in 1903, the date at which the State of California took the title which subsequently passed to the company. A few years ago Congress directed a reinvestigation of the title on the theory that the land might have been known mineral land in 1903, notwithstanding the action of the Navy Department in 1916.

"The company brought suit to enjoin such reinvestigation on the ground that the matter was closed by the decision of the Secretary in 1921. Two lower courts sustained the company's right to the injunction. The Supreme Court has reversed this ruling and holds that the present Secretary of the Interior may inquire into the title to the land. This leaves the company's title in the same situation in which it was at the time of the hearing before the Secretary of Interior in 1921."

CLEVELAND, Jan. 7.—Dr. Van H. Manning, one time director of the Bureau of Mines, former technologist of the American Petroleum Institute and for several years connected with the Doheny interests, has been appointed consulting petroleum engineer for the republic of Cuba. His first assignment, as laid out by Carlos Miguel de Cespedes, secretary of the public works department, in notifying him of his appointment, is the preparation of a schedule of sales taxes on carbon, coke, crude petroleum and all its derivatives, authorized by a law which became effective July 25, 1928.

Seminole District, New Pools, January 2, 1929 and December 26, 1928

MAUD

Company	Farm	S.T.R.	Jan. 2 Wells	Jan. 2 Prod.	Dec. 26 Wells	Dec. 26 Prod.
Amerada	Gossland	8- 8-5	1	780	1	660
Amerada	Hallum	1- 8-4	1	2,660	1	2,740
Barnsdall	Coker	11- 8-5	1	1,665	1	1,225
Barnsdall	Fife	14- 8-5	1	1,210	1	1,280
Darby	Ketcham	19- 8-5	1	495	0	0
Empire	Cluck	11- 8-5	1	399	1	0
Gypsy	Bourassa	7- 8-5	1	0	1	0
Gypsy	Coker	10- 8-5	1	662	1	0
Gypsy	Miller	18- 8-5	1	505	1	410
Indep. et al	Harding	18- 8-5	1	3,020	1	3,335
I. T. I. O.	Simpson	10- 8-5	1	81	1	49
I. T. I. O.	State	16- 8-5	1	0	1	0
Phillips	Hudson	19- 8-5	1	997	0	0
Pure	Lindly	18- 8-5	3	4,481	3	5,207
Prairie	Billington	11- 8-5	2	2,060	1	1,620
Prairie	Campbell	18- 8-5	2	3,395	2	4,135
Sinclair	Bellars	19- 8-5	3	3,895	2	3,210
Sinclair	Harjo	11- 8-5	1	1,392	1	1,464
Slick-W. Eagle	Villines	20- 8-5	1	100	0	0
TOTAL MAUD			26	27,777	19	25,335

MISSION

Carter	Fuswa	18- 8-6	1	50	1	50
Carter	Micco	8- 8-6	1	0	1	0
Gypsy	Baby	6- 8-6	1	10	1	15
Gypsy	Barkus	6- 8-6	1	0	1	0
Gypsy	Dosar	7- 8-6	1	397	1	457
Gypsy	Mission	5- 8-6	1	0	1	0
Gypsy	Mosar	1- 8-5	1	0	1	0
Marland	Maines	7- 8-6	1	105	1	50
Mid-Kansas	More	7- 8-6	1	105	1	50
Shell-Marland	Herndson	7- 8-6	1	0	1	0
Shell-Papoose	Maines	7- 8-6	1	0	1	0
Twin State	Hayes	8- 8-6	1	50	1	50
TOTAL MISSION			**12**	**717**	**12**	**672**

SUMMARY

Company	Farm	S.T.R.	Jan. 2 Wells	Jan. 2 Prod.	Dec. 26 Wells	Dec. 26 Prod.
TOTAL LITTLE RIVER			**321**	**85,288**	**318**	**87,079**
TOTAL MAUD			**26**	**27,777**	**19**	**25,335**
TOTAL BOWLEGS			**313**	**41,864**	**313**	**46,489**
TOTAL EARLSBORO			**293**	**70,353**	**294**	**69,906**
TOTAL SEMINOLE			**282**	**38,529**	**282**	**42,682**
TOTAL SEARIGHT			**68**	**8,916**	**67**	**9,760**
GRAND TOTAL			**1,315**	**273,282**	**1,307**	**281,901**
Avg. per well					**208**	**216**

St. Louis-Wilcox Sand Production

Company	Lease	Location	Wells	Prod. Jan. 4	Prod. Dec. 29
Barnsdall	Stahl	30- 7-5	3	1,852	2,050
Gypsy-Sinclair	Stahl	30- 7-5	4	9,432	10,552
Phillips	Stahl	30- 7-5	3	802	712
Sinclair	Blandin	24- 7-4	2	3,135	3,665
Sinclair	Nadash	20- 7-5	1	90	105
Magnolia	Hembree	19- 7-5	4	3,469	4,702
Magnolia	H. E. Youts	20- 7-5	6	6,160	6,704
Magnolia	C. A. Youts	20- 7-5	1	615	650
Magnolia	T. Fyke "A"	20- 7-5	1	100	.....
Magnolia	T. Fyke "B"	20- 7-5	1	3,823	3,718
Magnolia	Cherry "A"	26- 7-4	1	1,602	1,900
Slick	Hembree	19- 7-5	4	12,585	12,895
Slick	Youts	19- 7-5	2	1,077	647
Slick	Davis	18- 7-5	1	5,130	5,362
Mid-Continent	Guinn	20- 7-5	1	95	240
Pure	Thomas	26- 7-4	3	12,785	12,555
Independent	Youts	19- 7-5	8	21,150	21,065
Prairie	Wolfe	20- 7-5	4	3,340	3,620
Shell	Smith	21- 7-5	1	175	305
Shaffer	Cherry	23- 7-4	3	2,567	2,337
Texas Co.	Cherry	25- 7-4	3	9,085	8,420
Total Wilcox			59	99,069	102,235
Total Simpson			149	33,129	34,908
GRAND TOTAL			208	132,198	137,112

Completions in Oklahoma and Kansas, Week Ending January 5, 1929

OKLAHOMA

Carter County

Company	Well No.	Location	Depth	Init. Prod.
Sinclair	5	SWc SE NE 29-2-3 W	T.D. 2657	29M
Schermerhorn et al.	7	NW SE NE 22-1-3 W	T.D. 2615	40
Shasta	2	NWc SW SW NW 2-2-10 W	2171-2179	21

Cotton County

Company	Well No.	Location	Depth	Init. Prod.
Jenkins et al	2	NW NE SW 6-2-10 W	T.D. 2130	Dry

Creek County

Company	Well No.	Location	Depth	Init. Prod.
Bengall	8	NEc SW SW 17-17-7 E	2715-2742	700
Bengall	7	SEc SW 17-17-7 E	2657-2710	135

Grant County

Company	Well No.	Location	Depth	Init. Prod.
Argo	1	NEc 27-27-3 W	T.D. 4330 OWD	Dry

Kiowa County

Company	Well No.	Location	Depth	Init. Prod.
Russell-Sloan	1	NEc SW SE 6-5-14 W	T.D. 1524	Dry
Aregood et al	1	NWc SE SW 8-6-16 W	T.D. 501	Dry

Logan County

Company	Well No.	Location	Depth	Init. Prod.
Crosbie et al	3	SWc NW 20-19-4 W	6066-6108	2160
Sinclair	3	SW SE SE 18-19-4 W	6135-6165	1043

Marshall County

Company	Well No.	Location	Depth	Init. Prod.
Merrick	1	NE NW NW 24-5-5 E	T.D. 767	Dry

Muskogee County

Company	Well No.	Location	Depth	Init. Prod.
Glasco	1	SWc NE NW 7-13-18 E	T.D. 2032	Dry
Jolly	1	SEc NE 2-14-18 E	T.D. 1158	Dry
Buckels	1	SW SE NW 9-15-15 E	T.D. 1736	Dry
Miller et al	1	SEc NE NW 8-15-16 E	1643-1655	35
Graves et al	5	C SE NW 5-13-16 E	1834-1851	30
Babcock Bros	4	SEc NW NE 6-15-15 E	1593-1594	75
Mack Drlg	1	SEc NE 7-15-15 E	1196-1206	200

Okmulgee County

Company	Well No.	Location	Depth	Init. Prod.
Pine	1	SEc NE NE 30-12-13 E	2228-2237	20
Star Dev	5	NEc NW SE NE 15-13-14 E	1363-1370	10
Riney-Williams	4	NWc SW SE 9-14-14 E	1710-1750	6M
Unger Bros	7	SEc SW 24-15-14 E	1546-1581	6
Kirkland-Son	1	C SE NE 19-15-13 E	T.D. 2277	Dry

Osage County

Company	Well No.	Location	Depth	Init. Prod.
Lewis Prod. et al.	1	SEc 15-26-6 E	2947-2992	447 (17 Hrs.)

Pontotoc County

Company	Well No.	Location	Depth	Init. Prod.
Ramsey	3	NEc SW 19-5-8 E	2558-2633	450

Pottawatomie County

Company	Well No.	Location	Depth	Init. Prod.
Mid-Knasas	4	SE NW NW 30-7-5 E	4082-4175	345
Shell	1	NWc SW 28-7-5 E	4225-4351	61
Magnolia	2	SW SE SW 20-7-5 E	4480-4515	1180
Magnolia	2	NEc SE 20-7-5 E	4255-4380	30
Slick	1	SW NW NE 18-7-5 E	4102-4108	5562
Pure	1	NE SE SE 26-7-4 E	4290-4312	135
Gypsy	3	SE NE SE 26-7-4 E	4225-4264	500
Sinclair	2	NE SE SW 25-7-4 E	4187-4207	305
Sinclair	1	NW SE SE 25-7-4 E	4150-4217	707
McCulloch	5	SE NW SE 25-7-4 E	4195-4237	100
McCulloch	4	NW SW SE 25-7-4 E	4195-4205	350
Shaffer	1	NE SE SE 23-7-4 E	4185-4226	OWD 2305
Sinclair	2	NW NE NE 19-8-5 E	4128-4148	2455
Pure	3	NWc SE 18-8-5 E	4074-4095	2603
Pure	2	SWc SE 18-8-5 E	4124-4140	2300
Pure	1	SE SW SE 18-8-5 E	4098-4115	2563
Twin State	1	NWc 32-7-5 E	T.D. 4452	Dry
Texas	1	NW SW SE 30-7-5	T.D. 4275	Dry
Mid-Kansas	3	SW NW NW 30-7-5 E	T.D. 4501	Dry

Seminole County

Company	Well No.	Location	Depth	Init. Prod.
Champlin	1	SW NE SW 14-7-5 E	T.D. 4424	Dry
Gilcrease	1	NE SW NW 18-5-8 E	2654-2676	70
Carter	4	SE NW NW 24-7-6 E	4295-4308	1124
Gypsy	7	SW NE SW 23-7-6 E	4572-4580	955
Texas	1	NE SE SE 22-7-6 E	4183-4190	558
Independent	4	NE SW SW 13-7-6 E	4365-4317	955

Stephens County

Company	Well No.	Location	Depth	Init. Prod.
Magnolia	2	NW SW NE 12-1-4 W	2948-3254	900
Franklin	6	NWc SE 12-1-4 W	2915-3254	180

Wagoner County

Company	Well No.	Location	Depth	Init. Prod.
Horner et al	1	CSL NW NW 28-18-17 E	805-817	1.5M
Elk Drlg	7	NWc SW NW 22-18-17 E	779-793	5M
Kiskaddon	2	NEc SW NE 8-15-16 E	T.D. 1410	Dry
Peterson-Young	1	SWc NW 24-16-16 E	T.D. 990	Dry

KANSAS

Coffey County

Company	Well No.	Location	Depth	Init. Prod.
Clark-Braden et al.	1	SE NE 11-22-15 E	T.D. 1340	Dry

Cowley County

Company	Well No.	Location	Depth	Init. Prod.
Trees	1	C NW SW 12-32-6 E	2428-2475	2.5M
Kentucky Nitro. & Oxyg.	1	CNL SE SW 13-34-6 E	T.D. 1450	Dry

Greenwood County

Company	Well No.	Location	Depth	Init. Prod.
Christy	1	SE NW SE 24-24-9 E	T.D. 2337	Dry
Simmons-Rhodes	2	NW SW SW 29-22-13 E	1691-1710	75

Completions in Kansas, Week Ended Dec. 29, 1928 (Delayed)

Ellis County

Company	Well No.	Location	Depth	Init. Prod.
Mid-West Explo	1	NEc 36-12-16 W	3057-3087	75

McPherson County

Company	Well No.	Location	Depth	Init. Prod.
White Eagle	1	SE NW SW 31-18-2 W	T.D. 3045	Dry

Russell County

Company	Well No.	Location	Depth	Init. Prod.
Mid-West Explo	16	SE NW SE 5-14-15 W	3048-3086	80

Sumner County

Company	Well No.	Location	Depth	Init. Prod.
Helmerick-Payne	1	SEc NE 8-34-2 E	T.D. 3855	Dry

Completions in California, Week Ended December 29, 1928

Long Beach

Company	Well No.	Location	Depth	Init. Prod.
Continental Oil	Denio 1	....	5780	780
Olympic Oil & Refg.	Rogers 3	....	6490	100
Fourl, C. W	Sagamore 1	....	6255	750
Richfield	Conett 2	....	6348	600

Santa Fe Springs

Company	Well No.	Location	Depth	Init. Prod.
Getty, Geo. F.	No. 19	....	5932	1200
Richfield	Howard 1	....	5744	7056
Ring Petroleum	No. 1	....	5690	2560
Union Oil	Alexander 14	....	5540	6205
Universal	O'Connell 2	....	5826	6800

Huntington Beach

Company	Well No.	Location	Depth	Init. Prod.
Standard Oil	Bolsa 40	....	4437	155

Baldwin Hills—Inglewood

Company	Well No.	Location	Depth	Init. Prod.
Standard Oil	Investment 1	....	2600	650

Ventura Avenue

Company	Well No.	Location	Depth	Init. Prod.
Associated Oil	Lloyd 36	....	6800	1560

Round Mountain

Company	Well No.	Location	Depth	Init. Prod.
Shell Co	Freeman 2	20-28-29	1750	150

New Field Operations in Oklahoma, Kansas, Panhandle, North, North Central and West Texas, Week Ended January 5, 1929

OKLAHOMA

Carter County

Company	Well No. Farm	Location
Schermerhorn et al.	2-Joliff	NWc NE NE NW 24-5-1 E
Magnolia	3-Johnson	NWc SW 33-1-3 W
Texas	2-Eaves	SWc 24-1-3 W

Cotton County

Company	Well No. Farm	Location
Shasta	3-Chambers	NE SW NW 2-2-10 W

Creek County

Company	Well No. Farm	Location
Shaffer	5-Cain	SE NE SE 18-17-7 E
Bangal	10-Tiger	SWc NW SW 17-17-7 E
Mid-Continent	29-Stewart	NE NW SE 15-17-7 E

Kay County

Company	Well No. Farm	Location
Marland	1-Shimp	C NE NE 18-29-1 E

(Continued on Page 47)

New Field Operations in Oklahoma, Kansas, Panhandle, North, North Central and West Texas, Week Enden January 5, 1929

(Continued from Page 46)

Kiowa County

Company	Well No. Farm	Location
Ford - Foster - Duncan	1-Finney	NWc SW SW SW 8-6-16 W

Lincoln County

Mid-Continent	1-Tipton	SEc NE NW 13-15-5 E
Texas-Pacific	1-Seabo	NWc 19-16-5 E

Logan County

Shell	2-Shaffer	NE SE NE 19-19-4 W

Muskogee County

Durham-Smith	1-Wilkins	NEc NW 19-13-19 E
Mills-Hall	1-Brown	NWc SE NE 19-13-19 E
Sioux	3-Jordan	NWc SE SE SE 14-13-18 E
Slusher	1-Heckman	NWc 22-13-19 E

Okmulgee County

Garnett	1-Sneed	SWc SE NW 9-14-13 E
Gardner et al	2-Fixico	CSL NW SE 9-14-13 E
Becker-Hutchinson	2-Berryhill	NEc NW NW 8-14-13 E
Unger Bros.	8-Harrison	C SE SW 24-15-14 E

Osage County

Phillips	17	C NE 12-27-5 E
Phillips	17	C SE 2-27-5 E
Phillips	17	NW SW SE 21-25-12 E
Mid-Co Oil Co.	3	NWc SW SW 24-21-8 E
Moore Est	7	NWc NE NW NW 16-21-9 E

Pontotoc County

Ramsey	6-Millner	SW SE SE 18-5-8 E

Pottawatomie County

Gypsy	5-Miller	NE SE SE 18-8-5 E	
Independent	5-Harding	NW SE NW 18-8-5 E	
Skelly-Margay	2-Linger	NWc NE 18-8-5 E	
Magnolia	2-Brandenburg	NE NW NW 18-7-5 E	
Slick-Maud	2-Davis	NW SW NE 18-7-5 E	
Slick-Maud	1-Nesbit	SE NE NW 18-7-5 E	
Laurel	3-Billington	SW NE NW 18-8-5 E	
Laurel	2-Billington	NEc NW 18-8-5 E	
Amerada-Barnsdall	2-Wallace	NW SW SW 17-8-5 E	
Texas	5-Calvin	SWc SE 7-8-5 E	
Amerada	4-Hallum	SE NE SE 1-8-4 E	
Independent	2-Carson	NE NW NW 23-7-4 E	
Interocean	3-McGee	SE NE SE 23-7-4 E	OWD
Superior	2-Cloude	NW SW SW 13-7-4 E	
Pure	5-Lindley	SW NW SE 18-8-5 E	
Pure	6-Lindley	NW SW SE 18-8-5 E	
Sinclair	5-Blandon	SW NW SW 24-7-4 E	OWD
Sinclair	1-Bruno	CNL NE 26-7-4 E	OWD
Sinclair	1-Brandenburg	SE SW SW 7-7-5 E	
Sinclair	3-Nesbit	NW NE NW 18-7-5 E	
Sinclair	2-Nesbit	SEc NW 18-7-5 E	

Seminole County

Louisiana	2-Statler	SW SE SW 7-5-8 E	OWD
Carter	1-Eleck	C SW SE 23-7-6 E	
Magnolia	1-Fee	SW NW NE 11-8-5 E	
Texas	1-Dindy	SW NE SW 24-7-6 E	

Stephens County

Hanbury	8-Taliaferro	NWc SW SW 27-1-8 W
Atlantic	2-Taylor	SW NW NW 12-1-4 W

KANSAS

Butler County

Dixie	6-Marshall	SW NW NW 10-27-6 E
Alisson et al	4-McGinnis	SE NE NE 9-27-6 E
Davis-Hazlett	10-Lewis	SW NE SW 3-27-6 E
Empire	2-Huthcinson	NEc NW 34-27-5 E
Empire	2-Linnerson	SW NE SW 34-27-5 E
Patten et al	1-Marshall	NW SE SW 11-27-5 E

Elk County

Mann et al	2-Shrader	SW NW SE 12-31-8 E

Greenwood County

Syndicate-Phillips	2-Edwards	SW NW NE 35-23-11 E

Marion County

Franks	1-Propp	C SW SE 8-19-4 E

Morris County

Hiatt et al	1-Smith	NWc SE 35-15-5 E

Woodson County

Churchill-Wasson	1-Southwick	NWc SE 31-23-16 E

New Field Operations in Kansas, Week Ended Dec. 29, 1928 (Delayed)

Barber County

Barbara	1-Lytle	NEc SW 12-33-13 W

Harvey County

Fisher et al	1-Reiger	NWc NE 17-23-2 E
Empire	1-Tangeman	SW NE NE 19-22-1 E

Ness County

Company	Well No. Farm	Location
Barnsdall	1-Lank	C SW 35-18-21 W

Pratt County

O'Haver-Jones	1-Lunt	C SW NW 15-28-14 W

Russell County

Liggett et al	1-Burham	NEc 20-11-15 W

Sedgwick County

Bu Vi Bar et al	3-Wright	SW NE SE 12-26-1 W
Patton et al	1-Burham	SEc SW SW NE 22-25-1 E

TEXAS

NORTH EAST CENTRAL

Brown County

Milham	9-Roser	.....	Cross
Indian	1-Boyson	Blk-604	Mangle
Spinney et al	1-McCulley	Blk-53	Thom
McCling	1-Brooksmith	Blk-53	Thom
Green	2-Hill	Sec-8	Walker
Kone Prod	22-Hickman	Blk-783	Benson
Phillips	18-Hickman	Blk-783	Benson
Young Bros. et al	18-Hickman	Blk-783	Benson

Coleman County

Mid-West Expl	2-Gill	Blk-63	Merdal
Head	1-Gray	Blk-169	Hope
Continental et al	12-Overall	Sec-9	GH&H
Cont.-Atlantic et al	4-Overall	Blk-700	Barkley
Dunnaway et al	1-Baugh	Blk-494	Young

Limestone County

Hicks-Deering	1-Stroud	.....	Varella

Shackelford County

Big States	1-Petters	Sec-15 Blk-11	T&P
Terry et al	1-Flippen	Sec-35 Blk-11	T&P
Dull-Earl	3-Mathews	Sec-32	ET
Ohio-Texas	10-Mathews	Sec-29	ET
Petroleum Prod	2-Davis	Sec-20 Blk-13	T&P
Terry et al	1-Moberly	Sec-48 Blk-11	T&P
Roeser-Pendleton	86A60-Cook	Sec-60	ET
Roeser-Pendleton	32A61-Cook	Sec-61	ET
Ohio Texas	9-Mathews	Sec-29	ET

NORTH TEXAS

Archer County

Payne-Eddleman	7-Parrish	Abst-1004	SP
Ridgeway	2-Crawford	Blk-67	Corzine
Minnick et al	2-Wilson	Sec-2 Abst-859	Scott
Baggett	2-Kinder	Sec-63 Blk-5	Clark
Gilliland	2-Symank	Blk-11	Meade
Clar-Texas	1-Kell	Sec-2417	TE&L
Jeffers et al	1-Hamilton	Blk-6	BBB&C
Donohoo-Jamison	1-Andrews	Sec-1826	TE&L
American	1-Benson	Sec-1808	TE&L
Hull	2-Andrews	Sec-1399	TE&L

Cooke County

Becker et al	1-Gwett	Abst-363	ET

Wichita County

Humble	6-Taylor	Blk-81	KWVFL
Staley-Wynne	10-Kemp	Blk-82 Abst-139	HFTB
United Prod	7-Hodges	.....	H&TB
G.M.C.	1-Crudup	League-4 Blk-10	DCSL
Cont.-Hammond	2-Munger	Blk-31	KWVFL

Wilbarger County

Staley-Wynne	1-Waggoner	Sec-1	SP
Fain-McGaha	30-Waggoner	Sec-24 Blk-4	H&TC
Waggoner	4-Waggoner	Sec-31 Blk-4	H&TC
Texas	1-Harris	Sec-36 Blk-16	H&TC
Fain-McGaha	1-Waggoner	Sec-39	MEP&P
McKenna	4-Waggoner	Sec-31 Blk-4	H&TC
Lawson et al	1-Waggoner	Sec-29 Blk-4	H&TC
Waggoner	3-Waggoner	Sec-31 Blk-4	H&TC

Young County

Pettolrum Prod	5-Parish	Sec-409	TE&L
Steed-Gaus	10-Snyder	.....	Wilson
Dorian et al	3-Johnson	Blk-12	Sergenat
Wise-Jackson et al	3-Calvin	.....	Rohus
Pennell et al	1-Baker	.....	Richardson

PANHANDLE

Gray County

Phillips	5-Johns	Sec-87 Blk-3	I&GN
Gardner Bros. et al	1-Saunders	Sec-1	Eustice

Hartley County

Canadian River	10-Bivins	Sec-18 Blk-25	EL

Hutchinson County

Phillips	1-Bret	Sec-23 Blk-M-23	TC
Phillips	6-Johnson	Sec-64 Blk-46	H&TC

WEST TEXAS

Hall County

Rio Bravo	1-Hughes	Sec-39 Blk-H?	Stephens

Winkler County

Gulf Prod	3-Cowden	Sec-3 Blk-B-12	PSL
Texas Canadian	1-Kloh	Sec-35 Blk-46	T&P

Completions in Texas, Week Ended January 5, 1929

NORTH EAST CENTRAL TEXAS

Anderson County

Company	Well Farm	Survey	Sec. and Blk.	Depth	Init. Prod.
Humble	2-Smith	Roberts		T.D. 3814	Dry

Brown County

Burris et al.	10-Newton	Curlong		1214-1217	21
Crown	1-McCulley	Thom	Blk-53	1644-1715	1½M
Humble	8-Byler	T&NO	Blk-43	1314-1327	20
Kerr et al.	2-Hale	Cummings	Blk-607	T.D. 473	Dry
Kingwood	1-Lehman	HT&B	Sec-15	T.D. 2767	Dry
Milham Corp. of Tex.	8-Rosser	Cross		T.D. 1841	Dry

Coleman County

Humphrey Bros. et al.	3-Mathews	Ragent	Blk-43	1862-1867	30
Levi-Smith	2-Hill	Sprague	Blk-664	1848-1860	26
Tower-McKenna.	3-Moody	Scott	Sec-10 Blk-665	1856-1863	75
Ross et al.	1-Kemp	Lopaz	Blk-744	2254-2257	2.4M
Amerada-Ross Drlg.	1-Hayes	Bond	Blk-92	T.D. 1155	Dry
Kenwood	2-Ward	Eckles	Blk-274	T.D. 2501	Dry
Texas Prod.	1-Overall	Barkley	Blk-701	T.D. 2182	Dry

Jack County

Rathlatt et al.	1-Cantrell	SP		T.D. 505	Dry
Buttrum	10-Jones	SP	Sec-5	2033-2044	75

Shackelford County

Moe Best	1-Walker	T&P	Sec-8 Blk-11	T.D. 1203	Dry
Phillips	1-Powell	BAL	Sec-9	T.D. 2150	Dry
Roeser-Pendleton	2A83-Cook	ET	Sec-83	1358-1372	70
Roeser-Pendleton	3A83-Cook	ET	Sec-83	1363-1365	40
Tannehill et al.	4-Mathews	ET	Sec-34	1156-1159	40

Stephens County

Leiser et al.	1-Guest	T&P	Sec-41 Blk-6	2121-2307	½M

NORTH TEXAS

Archer County

American	4-Cermosek	TE&L	Sec-2409	1413-1433	57
Madden-Hunt	12-Richardson	SAR	Blk-7	1282-1304	40
Texas	23-Richardson	SAR	Blk-7	1296-1309	40
Burns	1-Forrester	Harris	Blk-74	T.D. 1652	Dry
Consolidated	1-Wright	TE&L	Sec-2435	T.D. 1459	Dry
Litchfield et al.	1-Duncan	Simmons		T.D. 1925	Dry
Parson et al.	1-Williams	Swing		T.D. 600	Dry

Grayson County

Simpson-Fell	3-Wahl	Ingram		869-879	4M

Wilbarger County

Simms	9-Waggoner	H&TC	Sec-5 Blk-5	1854-1870	50
Texas	1-Waggoner	H&TC	Sec-24 Blk-4	2441-2443	40 (8 Hrs.)
Waggoner	11-Waggoner	H&TC	Sec-30 Blk-4	2298-2311	80
Waggoner	3-Waggoner	H&TC	Sec-24 Blk-4	2363-2370	45
Derby	1-Waggoner	Coleman	Blk-2	T.D. 2439	Dry
Bass-Dillard	5-Waggoner	H&TC	Sec-5 Blk-5	T.D. 2380	Dry

Wichita County

Ascott	2-Jackson	DCSL	League-4 Blk-25	T.D. 1252	Dry
Bridwell	4-Burnett	H&TB	Sec-3	T.D. 1976	Dry
Staley-Wynne	1-Case	TE&L	Sec-831	T.D. 2009	Dry

Young County

Gulf Prod.	1-Bullock	TE&L	Sec-61	T.D. 1504	Dry
King Royalty	13-Hawkins	TE&L	Sec-1914	T.D. 540	Dry
Nix et al.	1-Andrews	TE&L	Sec-1913	T.D. 613	Dry
Pennell et al.	1-Cox	Tynes		T.D. 612	Dry
Willis-Gatewood.	1-Buster	TE&L	Sec-1469	T.D. 826	Dry
Gwynn	2-Kunkel	BBB&C	Abst-1838	1149-1163	58
Steed-Gaus	9-Snyder	Wilson		562- 581	18

PANHANDLE

Gray County

Magnolia	2-Archer	I&GN	Sec-174 Blk-3	3290-3310	30
Texas	1-Bull	H&GN	Sec-2 Blk-B-2	2806-2816	57
Texas	3-Davis	I&GN	Sec-86 Blk-3	3171-3210	175
Lefors Pet.	3-Shaw	Meeks		T.D. 2750	Dry

Hutchinson County

Phillips	12-Whittenburg	Tomlinson		T.D. 5333	Dry
Devonian	9-Johnson	Whitley	Sec-3	2890-2895	45

Wheeler County

Vaughn et al.	2-Fee	H&GN	Sec-21 Blk-24	1883-1952	78½M
Whittington et al.	2-Faycock	H&GN	Sec-2 Blk-27	1900-2010	58M

WEST TEXAS

No West Texas Report

Completions in North Louisiana and Arkansas, Week Ended January 3, 1929

Louisiana—Webster Parish—Shongaloo

Company	Well	Location	Depth	Yield
Magnolia Pet. Co.	H. H. Branton No. 1	5-22-9	2706	6M gas

Bossier Parish—Spring Hill

Doern et al.	Bolinger No. 1	9-22-11	4317	salt water, abd.

DeSoto Parish—Frierson

R. O. Roy	Whittaker No. 1	4-13-13	2950	salt water, abd.

Ouachita Parish

West Virginia O. & G. Co.	Fee No. 6	6-18-4E	2203	3M gas

Richland Parish

Ouachita Nat. Gas Co.	Pardue No. 4	5-15-6E	2440	50M gas

East Texas—Panola County

Eureka Nat. Gas Co.	Gulley No. 1	Jas. Matthews HRS	960	4M gas

Company	Well	Location	Depth	Yield
Magnolia Pet. Co.	L. Fletcher No. 2	B. C. Jordan HRS	2560	48M gas
Texas Company	T. C. Adams A-7	Lacy HRS	958	3M gas

Arkansas—Nevada County

Humble O. & R. Co.	Groves D-2	6-14-20	1140	25 bbls.

Ouachita County—Smackover

Little Fay Oil Co.	H. Primm No. 3	24-15-16	2084	30 bbls.

Union County—Rainbow City

H. L. Hunt, Inc.	Gregory No. 3	10-17-14	3260	225 bbls.
Lion O. & R. Co.	C. B. Nash No. 2	6-17-13	3050	100 bbls.

Union County—Hillsboro

Tate & Morefield	W. W. Smith No. 1	6-18-13	3302	dry, abd

Drilling Operations in Oklahoma, Kansas and Texas, Week Ended January 5, 1929

	Jan. 5 Loc.	Rigs	Drg.	S.D.	Week Ended Total	Dec. 29 Loc.	Rigs	Drg.	S.D.	Total
OKLAHOMA										
Osage	5	13	33	2	53	4	11	36	1	52
Bristow-Cushing	7	11	39	9	66	9	9	36	9	63
North Oklahoma	7	8	45	29	89	6	9	50	28	93
South Oklahoma	8	9	77	44	138	8	11	81	37	137
Muskogee	..	9	29	31	69	..	5	37	32	74
Okmulgee-Bristow	No Report					7	33	64	21	125
Seminole Dist.	20	80	361	30	491	24	79	359	30	492
Total Oklahoma	47	130	584	145	906	58	157	663	158	1,036
KANSAS	..	*43	262	56	361	..	*45	259	54	358
GRAND TOTAL	47	173	846	201	1,267	58	202	922	212	1,394

No Texas Report
No New Mexico Report
*Locations and Rigs combined.

Conservation Program at Santa Fe Springs Biggest Try at Unit Operation

By Lester C. Uren
Professor of Petroleum Engineering, University of California

Article 2

This article, together with the first in this series, carried in the Dec. 26 issue, complete a description of conditions attending field development and operation of wells in the Santa Fe Springs field in California, and the stratigraphic sequence of the several productive oil and gas zones.

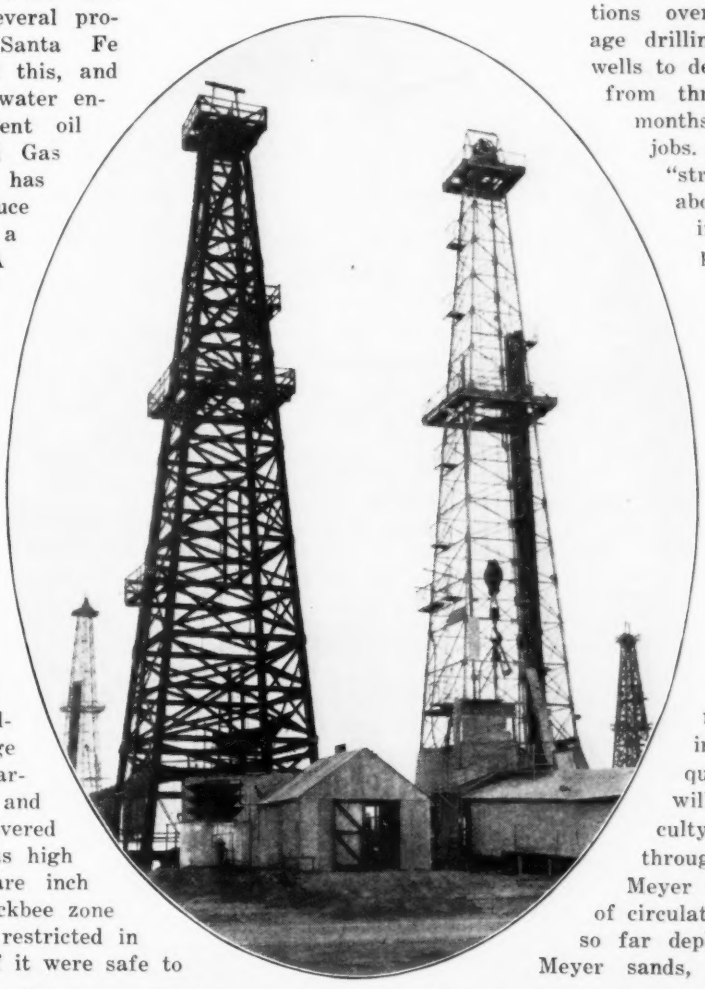
The concluding article, to appear in the next issue, will discuss in detail the measures by which the Santa Fe Springs producers hope to increase profits and secure more efficient recovery by group control of production from the newly discovered lower zones.

SANDS yielding large volumes of water to the wells are found between the several productive zones in the Santa Fe Springs field. Because of this, and because of irregular edge-water encroachment in the different oil sands, the State Oil and Gas Supervisor's Department has permitted operators to produce from only one zone at a time in any given well. A satisfactory water shut-off must be made in each well immediately above the zone from which it is to produce, while the overlying zones are thoroughly mudded as the wells are drilled through them. In drilling to the deeper horizons, operators are also required to make a water shut-off immediately above the Meyer zone, which promises many years of future productivity if properly protected. Each of the oil-bearing zones yields large volumes of natural gas, particularly the Meyer zone and the two deeper, newly discovered zones. Casing pressures as high as 1700 pounds per square inch have been recorded on Buckbee zone wells while only partially restricted in flowing through tubing. If it were safe to completely shut in lower zone wells, pressures in excess of a ton to the square inch would probably be developed.

During the early drilling of the field, a high-pressure gas zone was also found at about 2000 feet below the surface. Some rather serious "blow-outs" were experienced in drilling the early wells through this zone, but most of the gas has since been produced so that the new wells being drilled for Buckbee and Nordstrom production have not experienced difficulty in this horizon.

Due to the high pressures existing, the two lower zones are expected to produce large quantities of gas. Though the wells thus far completed in the Buckbee and Nordstrom zones have produced with gas-oil ratios of only 1300 cubic feet per barrel, this ratio is expected to rapidly increase as development proceeds. This lower-zone gas is unusually "wet" in comparison with that obtained from other California fields, averaging about two gallons of gasoline per thousand cubic feet of gas. If these lower zones develop a daily production of say, 150,000 barrels per day within the next few months, as seems probable unless the flow is severely restricted, the field may be expected to produce gas at the rate of 300,000,000 cubic feet or more per day, though such production will in all probability be short-lived.

The rotary drilling method is used only in this field, rapid progress being made in the comparatively soft formations overlying the sands. Average drilling time for Buckbee zone wells to depths of about 5900 feet, is from three and one-half to four months, including three cementing jobs. Wells are cased with three "strings" of pipe, comprising about 1000 feet of 16-inch, 18-inch or 20-inch conductor pipe, 3950 to 4200 feet of 11¾-inch of 13⅜-inch casing cemented above the Meyer sand, and 5400 to 5600 feet of 8⅝-inch casing cemented just above the Buckbee zone. The latter string is set at about 4900 feet if production is to be sought from the Nordstrom zone. The Buckbee and Nordstrom sands are sufficiently well cemented to stand up in open hole without casing, so that oil strings are not necessarily used in producing from them. Where required, 6⅝-inch oil strings will be used. A common difficulty encountered in drilling through the partially drained Meyer sands is occasioned by loss of circulation. The pressure has been so far depleted in the highly porous Meyer sands, that they readily absorb the drilling fluid, which develops a static pres-



Meyer zone producer and deep zone drilling well, side by side, Santa Fe Springs field, Calif.

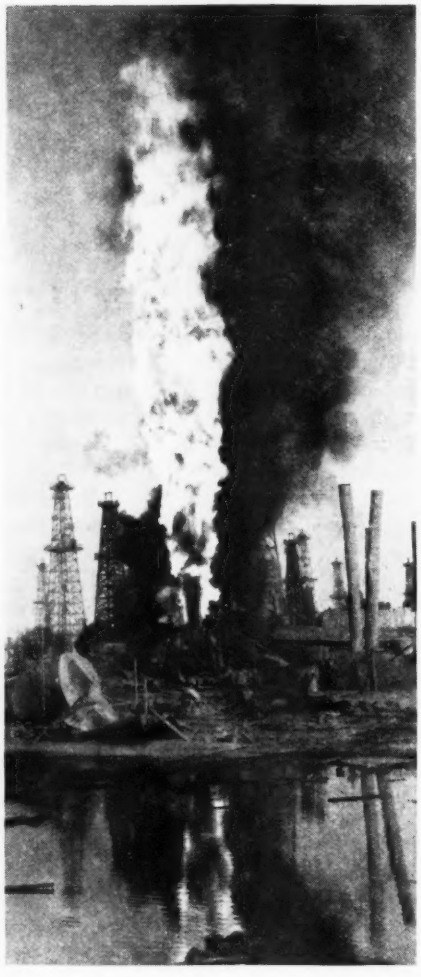
sure of about 1900 pounds per square inch at a depth of 4000 feet, with some additional pressure superimposed by the circulating pumps. Circulation can only be regained by forcing heavy mud into the sand until the pores of the rock surfaces forming the wall of the well are closed.

Resort is frequently had to the use of hydraulic lime, a little cement, or flax seed hulls in admixture with the mud fluid, to assist in sealing the sands. The question has been raised in some quarters concerning whether or not the two hundred or more wells that have already drilled through the Meyer sand or are scheduled to do so in the near future, will not have forced such large quantities of mud into the sand as to cause difficulty in its subsequent exploitation. The State Oil and Gas Supervisor's Department requires that the Meyer sand be mudded off in all lower zone wells by continued circulation under pressure until the formation absorbs less than five barrels of fluid per hour. The requirement is imposed as a precaution against water incursion from lower horizons.

Another difficulty that has been experienced by the early wells penetrating the Nordstrom and Buckbee zones, is that of contending with the high gas pressures encountered. The gas pressure in the Buckbee sand was probably originally in excess of 2000 pounds per square inch, so that heavy mud fluid must be carried in the wells and in sufficient depth to avoid a "blowout." Allowing the circulating fluid to become "gas-cut" so that its density is reduced, failure to add mud fluid in sufficient quantity when drawing out the drill stem, or absence of proper fittings on the casinghead, may lead to disastrous blowouts under such pressures.

Two lower zone wells have recently been brought in out of control, and in each case the flowing oil and gas became accidentally ignited, leading to spectacular and costly fires. The first of these two wells burned continuously for seven weeks and was then extinguished only with great difficulty and expense. After the fire was extinguished, this well was found to be producing at the daily rate of 6000 barrels of oil and 10,000,000 cubic feet of gas. The second fire well, said to be producing 30,000,000 cubic feet of gas and 2500 barrels of oil per day was extinguished after burning for three weeks. (See Figure 5). Property destruction, together with the value of the oil and gas consumed and the cost of extinguishing these two fires, is estimated at upwards of two million.

Drilling costs in the Santa Fe Springs field have been high. Meyer zone wells drilled to depths of less than 4800 feet in 1923, cost from $65,000 to as much as $210,000, possibly averaging about $80,000. The average cost of drilling the 230 or more Buckbee and Nordstrom zone wells will probably be in excess of $100,000.



Bellview Oil Co.'s Grohs No. 2 well in the Santa Fe Springs field in flames, consuming 2500 barrels of oil and 30,000,000 cubic feet of gas per day. Another well which caught fire in this field, Getty's Nordstrom No. 17, for a period consumed 6000 barrels of oil and 10,000,000 cubic feet of gas

In view of the high cost of drilling in this field and the advantages of early completion in the lower zones, one would expect to find many operators resorting to the plan of deepening their Meyer zone wells. This, however, has been done only in a few instances, the Meyer wells being generally in poor mechanical condition or of too small diameter to permit of cementing another water string and landing a new oil string in the deeper zone. Then too, Meyer zone wells are still highly profitable, averaging about 130 barrels per day, and promise to become more so in view of the proposed repressuring operations.

Production Methods

Most of the early wells in the upper zones produced for a time as flowing wells, but as the pressures declined they were necessarily pumped. This was one of the early deep pumping fields and much of the pioneer work in development of long stroke pumping devices, balancing of loads and other means of improving deep well pumping efficiency, were developed here. The gas lift seems to have been used only to a limited extent in this field, possibly because this method of lifting oil had its chief development after the pressure in the upper Santa Fe Springs sands had been reduced below the point where the method might have been profitably applied.

Buckbee and Nordstrom wells have thus far produced by natural flow methods; but, with rapid depletion of the gas pressure, it is certain that in a very few months artificial methods of extracting the oil must be resorted to. It seems probable that these deep wells will be operated by gas lift methods for as long a time as possible, for plunger pumping from depths of 5500 to 6000 feet with present available methods and equipment, promises to be costly and inefficient.

(*To be Concluded*)

Sinclair Party Visits Mid-Continent

TULSA, Jan. 4.—A party of railroad and industrial leaders, accompanied by E. W. Sinclair, president of the Sinclair Consolidated Oil Corp., arrived in Tulsa Dec. 30 for a brief visit to Mid-Continent points. Entertainment features were planned for them by John H. Markham, Jr., producer and director of the Sinclair company; George S. Bole, oil producer, and Frank Phillips, president of the Phillips Petroleum Co.

The party included, besides Mr. Sinclair, J. M. Davis, president of the Delaware & Lackawanna railway; E. P. Thomas, executive vice-president of the U. S. Steel Corp.; E. K. Conneely, vice-president of the Pullman Co.; J. H. Watters, vice-president of the New York Air Brake Co.; M. R. Reeves, cotton broker; J. E. King, vice-president of the American Radiator Co.; Preston Davies, vice-president of Pattison & Downs.

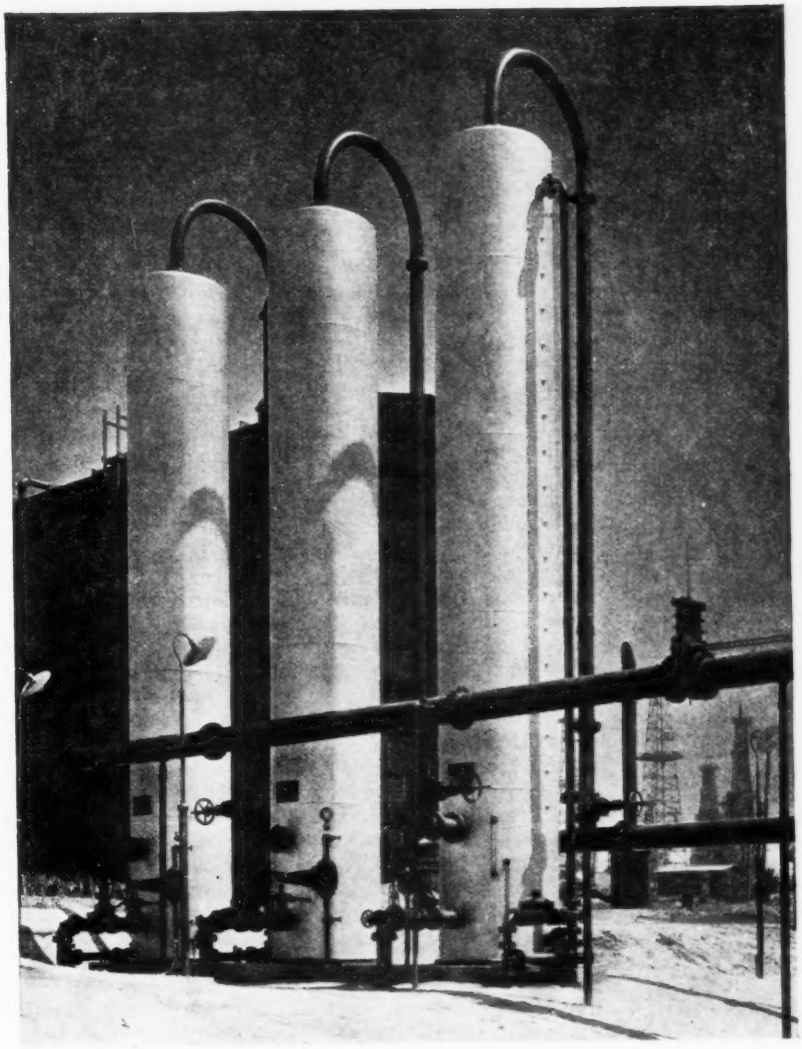
Bourque Gets Christmas Gift

TULSA, Jan. 3.—An unexpected Christmas and farewell gift was presented to A. V. Bourque Christmas morning by the board of directors of the Natural Gasoline Association of America. The gift was a sport model Ford coupe. Mr. Bourque resigned Dec. 15 as secretary of the association, a position he has held since the association was organized, to become associated with the Western Petroleum Refiners Association.

LOS ANGELES, Jan. 3.—Edington & Witz are installing an additional Southwestern Engineering Co. tube still at Signal Hill. This unit has 4,000 barrels daily capacity and includes a Lientz recirculating system on the exhaust gases.

BRAUN

BUBBLE ABSORBER



Three 5-foot diameter Braun Bubble Absorbers in Signal Hill's latest absorption plant.

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Michigan Making Intelligent Study Of Oil/Gas Conservation

By Paul Wagner
N. P. N. STAFF WRITER

Article 3

FAIR and intelligent cooperation awaits the legitimate oil operator who may have occasion either through necessity or desirability to deal with the various state departments in Michigan.

He need have no fear in laying all his cards on the table, face up. In fact, not to do so may automatically create suspicion and cause his subsequent operations in the state to be watched.

Because of the newness of the state to oil production, existing statutes remain inadequate for dealing with some of the problems arising, but the governmental set-up is ideal for handling most situations.

Michigan is one state in this grand old union where the business of the people is conducted after the manner of a successful corporation. The people elect their representatives to the legislature, which, in effect if not actually, constitutes the composite will of the people. The legislature then appoints an administrative board in much the same manner as the stockholders of a corporation elect a board of directors.

The governor of Michigan although elected by the people, in reality functions as the president of the state's corporation; and in similar relationship to the administrative board as the chief executive of a corporation bears to his directors.

In Michigan, the state government is not subject, as such, to being made defendant in litigation. It is the governor, by name, who assumes this responsibility.

Now, how does this affect the oil business?

As stated in the beginning, the legitimate oil operator has nothing to fear when it comes to dealing with the state government. The state is as anxious as he to do the right thing, within the limits of its knowledge and legal machinery.

Insofar as statutes apply to individual situations they are enforced. Where abuses not previously experienced in the state have arisen, laws to afford relief are now ready for presentation to the January legislature. There is little question of their passage.

It is noteworthy that care has been exercised in preparation of proposed laws, that their prohibitive features shall apply only to the case in point, to the end that legitimate industry shall not be embarrassed by changing conditions in the future.

Paul Wagner is a NATIONAL PETROLEUM NEWS *staff writer on subjects connected with the production of oil. His headquarters is Houston, Tex., where he covers the Texas and other Gulf coastal producing fields. He was sent to Michigan to look over the field and set forth the conditions prevailing in the development of Michigan fields.*

Article 1 of this series was published in the Dec. 19 issue, and Article 2 in the Dec. 26 issue.

Although the state is not out of its swaddling clothes as an oil producing region, the departments involved are giving their serious consideration to the problem of rational conservation of both petroleum and natural gas and to the protection of other industries from possible injury due to bad field practices.

A case in point was the flooding of brine horizons in the Saginaw area by waters from other levels, due to bad casing jobs and improper shutoffs in wells drilled for oil and gas. The recovery of salt and raw chemicals from brine horizons is one of Michigan's most important and lucrative industries.

Until his resignation in December, a full time oil and gas supervisor was on the job at Muskegon, assisting and advising producers in that field on production problems, and enforcing such statutes as applied to the situation there.

THE supervisor, Beverly H. Tucker, formerly of Ardmore, Okla., was hired on recommendation of specialists of the United States Bureau of Mines, who made exhaustive studies of Muskegon conditions on invitation of the state of Michigan.

A member of its staff has been assigned by the Michigan attorney general's department to the job of caring for the legal work of the state's conservation division. He will assist the department in framing adequate legislation for conservation purposes.

Most of the Muskegon operators have shown willingness to cooperate with the department in promoting such measures as will insure proper economic operation of the wells. Unfortunately, however, it has been necessary to take action in some cases against certain operators who were more interested in flashy showings for promotion purposes than the conservation of gas and reservoir pressures for economic oil recovery.

Some weeks ago it became evident that the close spacing of wells in the upper producing horizon at Muskegon was working havoc with well pressures. This was one of the first criticisms made by Bureau of Mines experts in their study of the field. In consequence, a conference was called by Governor Green to consider the problem and, if possible, work out measures for relief.

AFTER considering all angles of the situation and hearing opinions of experts, the governor issued an executive order to the conservation department that no permit would be issued thereafter for the drilling of a well on less than five acres. This order did not affect permits previously issued.

One of the Muskegon operators who had pending an application to drill his second well on a smaller lease than five acres started his test in defiance of the governor's order and without approval of his permit. He and his drilling crew were arrested, but the operator retaliated by obtaining temporary injunction restraining the state from interference. Afterward, the injunction was made permanent because of the lack of state laws covering the points involved.

The same operator recently started blowing one of his gas wells wide open at the rate of 10,000,000 cubic feet daily in violation of a gentlemen's agreement among operators, to which he had committed himself a few days previously.

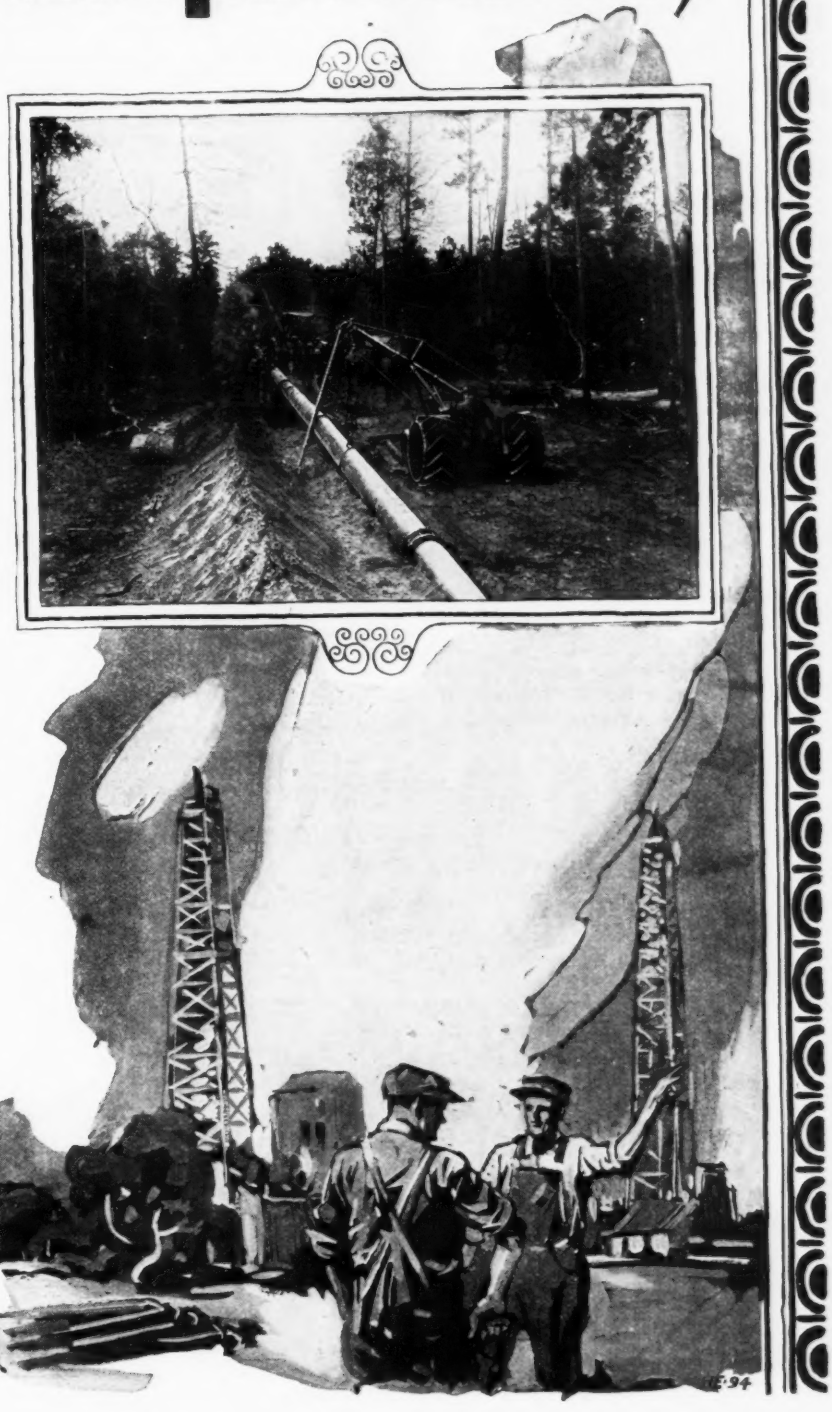
At the time of the violation, other Muskegon operators, with one exception, had pinched their wells to a gas/oil ratio of 2000 cubic feet to one barrel of oil. When, on the following day, his well started making 56 per cent water the other operator also fell in line.

In order to force the recalcitrant to pinch back his well within terms of the agreement the state invited other operators to join in an equity suit,

Unified Responsibility

The Hope Company is the one organization serving the natural gas and oil industry which is ready and qualified to assume entire responsibility for a pipe line enterprise "from well to meter". It is not only ready, but it has repeatedly done so—to the satisfaction of all concerned.

More than this, the Company is ready also to undertake field surveys, market analysis, and aid in financing and organization—as it has repeatedly done in the past.



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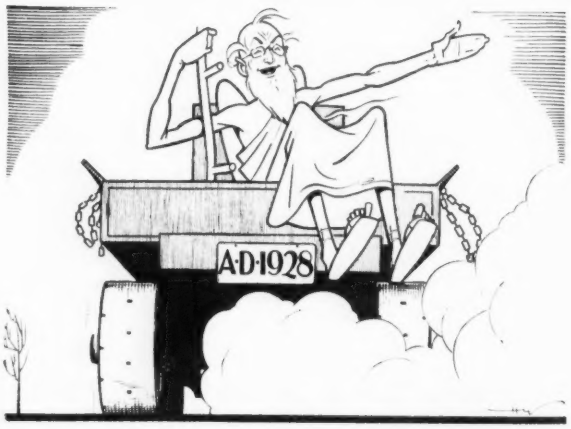
Billions of Bubbles



GONE is the year 1928, with its memorable Hoover-Smith campaign, its Kellogg Anti-War Treaty, its trans-oceanic flights. These events will live in history.

So likewise will live in history—gasoline history—the unprecedented production of 1928. A telling factor in this large production is Campbell equipment.

Campbell-designed-and-built plants in the Long Beach area produced 43.4% of the field's entire output for 1928.

Campbell "Oil-Froth" Absorbers produced 77.9% of all the gasoline produced in California for the same period of time.

Watch our record for 1929.

Write for "Billions of Bubbles." It tells how.

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Originators of Oil-Froth Absorbers

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pleading injury to properties in the field. This the operators refused to do, so the state proceeded to bring the suit alone.

When the equity case came to trial in circuit court at Grand Rapids it was decided that inasmuch as the state was not a producer in the Muskegon field, and its acreage lay three-quarters of a mile from the well in question, it could not prove direct injury. Hence, the state lost the case.

By that time, properties adjacent to the offending well had suffered serious pressure declines and were being affected to an alarming degree by water encroachment. As a result, adjacent operators then brought suit to force pinching of the well in conformance with the gentlemen's agreement. In this they were successful, thus establishing court precedent. The next step is to provide statutory machinery to deal with similar situations by legislative enactment.

Muskegon Trade Body Comments on Article

MUSKEGON, Mich., Dec. 27, 1928

Editor:

I have read with great interest Mr. Paul Wagner's able article on the Muskegon oil field printed in your issue of December 19.

May I call your attention to a statement in the article which may be misconstrued. In paragraph 13 Mr. Wagner says: "In their shortsighted policy the pipe line companies have been aided and abetted by civic organizations of the communities composing Greater Muskegon."

The Greater Muskegon Chamber of Commerce is the principal civic and commercial organization of Muskegon, Muskegon Heights and North Muskegon. Our committee on gas and oil has consistently stood for conservation and has employed such moral influence as it possesses to bring producers and consumers together on a program that would prolong the life of the field and make it possible to produce a maximum yield.

That these efforts have not been entirely successful is obvious. We are facing the same problems in the Muskegon field that many another field has faced in its infancy. Diverse ownership, lack of experience on the part of many operators, lack of adequate legislation and the individualistic spirit have made it very difficult to obtain that unity which, as Mr. Wagner so clearly points out, would result in larger ultimate profits to everyone. My only purpose in writing this letter is to correct the misapprehension that the Chamber of Commerce is not working along these lines.

Very truly yours,
J. C. Beukema,
Secretary-Manager.

Events Are Marching Rapidly in Newest California Field, Elwood Terrace

THE accompanying article on the new Elwood Terrace field, near Santa Barbara, Calif., is published by permission of the Barnsdall Corp., for whose publication, circulated to employes and stockholders, it was prepared. It was scheduled to appear in the January issue of the company magazine. Photographs also are supplied by Edwin I. Reeser, who edits the company magazine.

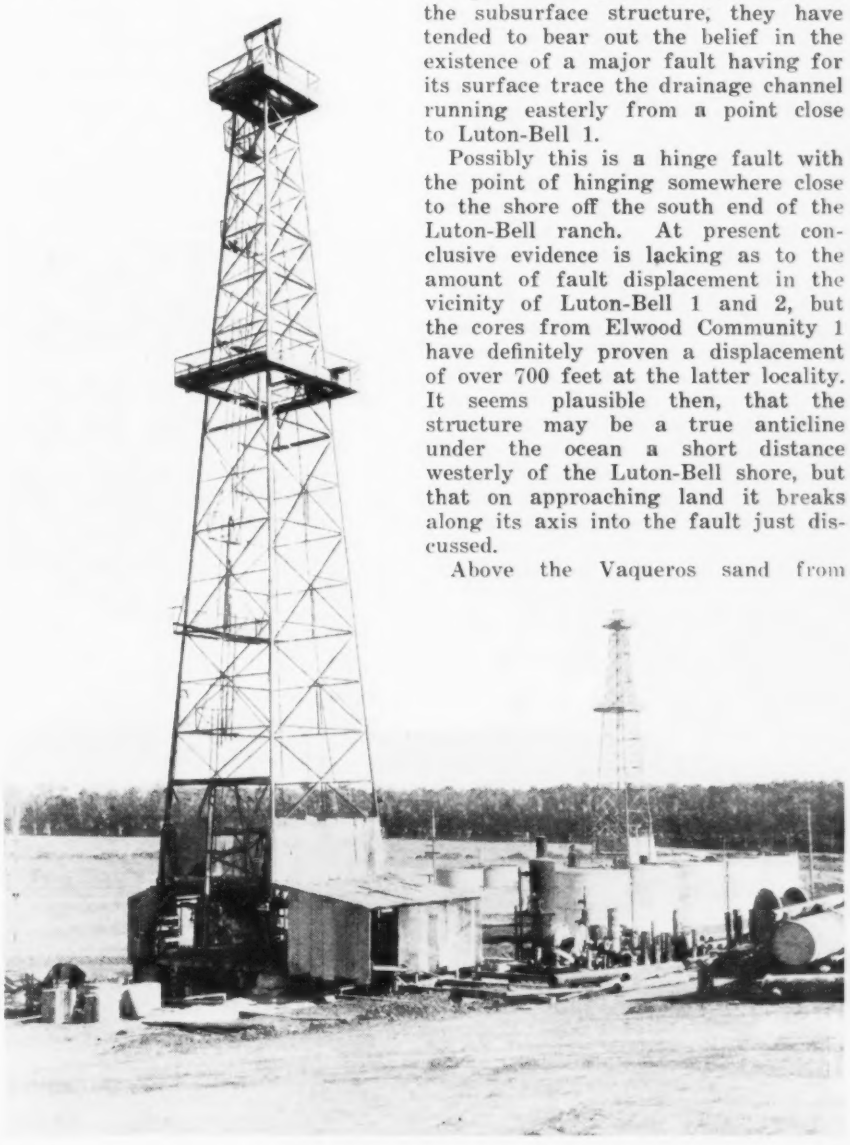
A RAPID march of events at Elwood in the last three months has been heralded by the drilling and completion of two more excellent oil wells, installation of a 15,000-gallon capacity absorption plant, the opening of a de luxe service station at the state highway on the Luton-Bell lease, the erection of two 80,000-barrel storage tanks, and the laying of a 3100-foot, 10-inch ocean pipe line through which, on Nov. 16, 1928, a Standard Oil tanker loaded in 13 hours the first ocean shipment of 78,000 barrels of Elwood crude.

At present, Luton-Bell 3 is standing cemented on top of the Vaqueros sand which is found at 3176 feet on Dec. 1 and from which it will unquestionably soon be producing another 4000 or 5000 barrels per day. Doty 2, now drilling below 2000 feet, is checking favorably with the other wells, and should be in the sand in a few days.

The first of the new wells completed was Luton-Bell 2, located 500 feet northeasterly of No. 1. Drilling started Sept. 29, and the well was completed Nov. 3 for an initial production of 4000 barrels, 38.8 gravity, clean oil. The top of the oil sand was found at 3329 and was penetrated 74 feet to a total depth of 3403. The well came in without swabbing or bailing and cleaned itself of mud and water within about 15 minutes.

Doty, 1, located on the adjoining Archambeault-Doty lease, 1550 feet southeasterly from Luton-Bell 1, was the second new well completed. A total of only 33 days elapsed from the date drilling started until the well was completed on Nov. 10. Its production for the first 24 hours was 4061 barrels; the gauge for the next period showed 4106 barrels, 38.8 gravity, 0.1 cut, with pressures of 950 pounds on the casing and 350 pounds on the tubing. As with Luton-Bell 2, the completion of Doty 1 also lacked of the spectacular in that the swab was run only four times from a shallow depth; in fact, the well started flowing of its own volition after standing for half an hour while the crew worked on part of the machinery. At 3283 a core revealed the first oil sand, which was penetrated to 3386, opening up 103 feet.

In addition to these two completions, Elwood Community 1, located on Elwood Acres, approximately 6000 feet east of the discovery well, drilled to 4401 after finding oil sand on Oct. 28 at 4359. This is the same Vaqueros sand now producing over 10,000 barrels per day from the three wells, Luton-Bell 1 and 2, and Doty 1, which have already aggregated over one-half million barrels. That the same sand from which these wells are producing contains oil at a location over a mile away and approximately 1000 feet deeper, gives a most promising outlook to the entire field, and in the writer's opinion is of much greater significance in indicating the potential values and size of the field than is the completion even of Doty 1, which actually extended the proven part of the field over a quarter of a mile. It indicates a probable structural closure of about 1000 feet, practically assuring the complete saturation of the Vaqueros sand over much of the field and greatly enhancing the possibility of good production in the Sespe formation immediately below the Vaqueros. The possibilities of the Sespe are more fully discussed below.



The discovery well in the Elwood Terrace field, owned by Barnsdall Oil Co. of California and the Rio Grande Oil Co.

Geology

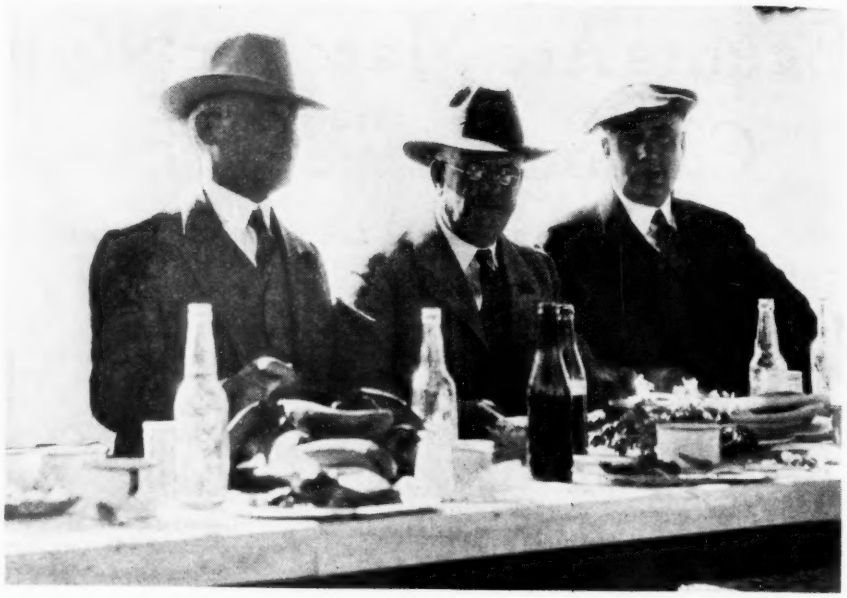
Though wells thus far drilled have not yet revealed the exact nature of the subsurface structure, they have tended to bear out the belief in the existence of a major fault having for its surface trace the drainage channel running easterly from a point close to Luton-Bell 1.

Possibly this is a hinge fault with the point of hinging somewhere close to the shore off the south end of the Luton-Bell ranch. At present conclusive evidence is lacking as to the amount of fault displacement in the vicinity of Luton-Bell 1 and 2, but the cores from Elwood Community 1 have definitely proven a displacement of over 700 feet at the latter locality. It seems plausible then, that the structure may be a true anticline under the ocean a short distance westerly of the Luton-Bell shore, but that on approaching land it breaks along its axis into the fault just discussed.

Above the Vaqueros sand from

which the Elwood Field is getting its production, the entire thickness of formation through which the wells are drilled consists of brown and gray shales, containing layers of hard silicified shales and numerous lenses of limestone, and though these hard layers serve to distinguish general zones of several hundred feet in thickness, as yet no single definite marker bed has been found which could be reliably used in correlating from one well to another. Therefore, in the absence of such a marker, the science of Micro-paleontology has been called upon and has proven itself valuable. By a study of Foraminifera in cores from the Elwood wells, depths of the oil sand in Luton-Bell 2, Doty 1, and Elwood 1 were estimated with surprising accuracy, particularly in view of the newness of the field and the limited time for study because of the speed in drilling. This study was conducted by W. M. Smith, who has contributed an article elsewhere in this magazine. In Luton-Bell 2, two alternate depths were estimated for the top of the sand—3250 and 3327; the sand was encountered at 3329. In Doty 1 the estimated depth was 3283; the top of the sand was actually 3275. In Elwood Community 1 the estimated depth was 4374, the actual 4359.

The Vaqueros sand in this region, as has been discussed in previous articles, is a soft, rather fine grained, quite porous sandstone with occasional hard streaks. The thickness in nearby exposures is from 300 to 350 feet. Immediately under the Vaqueros sand is the Sespe formation of variegated shales, sands, and sandstones, totaling about 3000 feet in thickness. The log and core records of Edwards 1 and 2, drilled by the Barnsdall on the Edwards lease about five miles west of Elwood, show about 47 per cent of this formation is sand and sandstone. Though many of these Sespe sands are fairly hard they are sufficiently porous to serve as a reservoir for oil and to consequently be potential oil zones in the Elwood field.



At the barbecue given in celebration of the opening of Barnsdall's new sea-loading terminal. Left to right, E. B. Reeser, president of the Barnsdall Corp.; R. A. Broomfield, president of the Barnsdall of California and James A. Dunn, New York, vice president and director of the Barnsdall Corp.

Proven Acreage

In a field as new and slightly developed as Elwood it is impossible to predict with accuracy the amount of productive acreage, but in the light of our present subsurface knowledge, including the existence of oil sand in Elwood Community 1, it seems quite safe to anticipate a field not smaller than 500 acres, and when we consider the area concealed by the ocean, the expectation of a 1000-acre production area is not unreasonable.

Production Per Acre

With the incomplete data now at hand an estimate of the probable production per acre involves a number of unknowns. Decline curves are of no avail because the wells are producing as much now as when completed. This is notably so in the case of Luton-Bell 1, which after 150 days shows only about 50 barrels below its initial daily production, and no apparent decrease in gas pressure. However, at least a reasonable approximation of expected production per acre can be obtained by the saturation method. Using this method we get a figure of 210,000 barrels per acre as an estimate of the total oil recoverable, if we consider the Vaqueros sand to be 350 feet thick with a 25 per cent porosity and complete oil saturation, and if we assume the ultimate recovery of oil as 30 per cent. (The porosity of 25 per cent is supported by preliminary tests of the sand.) This estimate of 210,000 barrels per acre might seem somewhat high to the average reader, but from the type of sand, the character of the oil, and the performance of the producing wells, it appears on the contrary rather conservative.

We have already mentioned the increase in the potentialities of the Sespe formation as a result of the 1000-foot closure indicated by the finding of oil sand in Elwood Community 1. Let us consider only the first 500 feet of the Sespe formation and assume that only 45 per cent of it, or 225 feet, is sand. If the porosity of this sand is taken as 15 per cent, and the recoverable oil as 25 per cent it would be possible to get 78,000 barrels of oil per acre from the top 500 feet of Sespe, and though this figure might be too high for the entire field it could reasonably be expected to hold for the higher portions of the structure.

Comparison to Long Beach, the Wonder Field of California

It is somewhat the habit of many California oil followers to view any new field in the light of the wonder Long Beach structure, so it might prove interesting to Barnsdall readers if we place Elwood before this camera

The sea-loading terminal near Santa Barbara, installed to load crude from the Elwood Terrace field on tankers

Confidence in
Sterling Oil Sections
is expressed in another way

Different oil refiners studied Sterling Oil Condensing and Cooling Sections for periods ranging from one to three years before making the first installation.

All of them have placed many repeat orders since that time.

In the year just past, one of these plants ordered an additional thirty-four carloads, another eighteen carloads, another twelve carloads. There are many others like them.

One manufacturer of a special process has specified Sterling Sections on nearly 100% of his work.

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of comparison and look at the resultant hypothetical pictures of the future. In so doing, however, it is to be remembered that the character of the geologic formations involved in the two fields are materially different and their ages are widely separated, Long Beach (Pliocene) being much younger than Elwood (Lowest Miocene and Oligocene).

A contrast of drilling costs is particularly significant. At Long Beach the average cost of wells drilled to the 3300-foot zone by the most efficient operators was $75,000, whereas at Elwood where the present development is to practically the same depth, Luton-Bell 1 cost $55,000, while Luton-Bell 2, Doty 1 and subsequent wells will total only about $35,000 each.

The total production of oil from Long Beach to Oct. 1, 1928, was 310,000,000 barrels, of which 290,000,000 barrels has been estimated to be exclusive of the new deep zone. (For the comparative pictures we are about to draw, this deep zone will be eliminated.) The thickness of the two measures which have contributed practically all of this 290,000,000 barrels of oil is 3700 feet. Though consistent or comprehensive estimate of the percentages of sand in these zones have not been made, it is generally conceded by those most familiar with the field that 60 per cent is a fair average. This indicates the existence of 2220 feet of sand in these oil horizons.

It is believed that three-fourths of Long Beach oil, or 217,500,000 barrels, comes from the best two-thirds of the field, or from approximately 700 acres. Accepting these assumptions, the best part of the field has shown a recovery to date of 135 barrels per acre/foot of sand or 310,714 barrels per acre.

Now let us apply these results to the Sespe formation at Elwood. As we have seen above, this formation is 3000 feet thick, containing approximately 47 per cent, or 1400 feet of sand. If we assume the *ultimate* oil recovery from a completely saturated Sespe formation as only equivalent to the recovery *to date* at Long Beach (135 barrels per acre/foot of sand), we see the bright picture of 189,000 barrels per acre *from below the present Vaqueros producing horizon at Elwood.* If we reduce our picture to half of the Sespe, or 700 feet of sand, we see 94,500 barrels per acre.

LOS ANGELES, Jan. 4.—Leonard E. Vaughn has been named sales manager of the disk bit division of Byron Jackson, Inc., with headquarters in Los Angeles. Harry M. Taylor is his assistant. Mr. Vaughn was formerly in charge of field sales in California for the Wilson Oil Tools Corp.

INDEX TO ARTICLES

Selected Bibliography on Petroleum Technology

Editor's Note—The brief abstracts of current literature printed below are so arranged that they may be cut apart and mounted on 3" x 5" library indexing cards. The indexing numbers assigned bring the cards into logical sequence in the files. The "Decimal Index of Petroleum Technology" gives the key to the articles. This book is published exclusively by NATIONAL PETROLEUM NEWS as a service to its readers. Price $1.00. Abstracts started April 4, 1928.

Mills, R. Van A., Chalmers, J., and Desmond, J. S. 537.

"Oil Recovery Investigations of the Petroleum Experiment Station of the U. S. Bureau of Mines"

Am. Inst. Mining & Metall. Engineers, Technical Publication No. 144, October, 1928, 36-pages. Reprinted in part in the Oil & Gas Journal, Oct. 18, 1928, p. 151.

This paper is primarily a progress report, briefly outlining the Bureau's method of study, describing the equipment used and giving some of the preliminary results. Early studies have been directed toward the problems encountered in repressuring oil sands. Special steel tubes and pressure tanks have been constructed, which are filled with sand, the pores of the latter being filled with gas-saturated oil. The oil is produced through miniature wells under carefully controlled conditions, designed to simulate those encountered in field exploitation. Many illustrations and structural details of the equipment are reproduced.

Many preliminary problems have had to be solved before the more important problems could be attacked, among these being that of providing a supply of compressed air and compressed gas of uniform properties; of making provision for accurate pressure and volume measurements, and for determining the solubility of gas at elevated pressure in the oils used. Proper temperature control has also been an important consideration. Complete physical analyses of the oil, gas and sands used are given. Changes in the properties of the oil and of air used in repressuring, are being studied.

One hundred and thirty flow tests have shown recoveries due to gas expulsion ranging from 9.4 per cent to 40 per cent, the percentage recovery increasing with the initial pressure. Rapid recovery gives increased percentage yield. Repressuring has been found to be effective in increasing the ultimate recovery to 52 per cent. Pressure maintenance and early repressuring have been found to be less effective than pressure restoration from the stand-point of ultimate recovery, but are more effective in securing rapid recovery. Compressed air has been found to be slightly more effective as a repressuring agent than natural gas.

(Cross-index under 533.2)

March, H. N., 514.5

"Deep Well Pumping in California"

Am. Inst. Mining & Metall. Engineers Technical Publication No. 143, October, 1928, 13-pp. Reprinted in Oil Weekly, Nov. 9, 1928, p. 50; and Oil & Gas Journal, Oct. 18, 1928, p. 169.

This paper briefly discusses some of the factors influencing the successfull solution of problems encountered in pumping wells ranging from 3,000 to 5,500 feet in depth, in the Southern California fields. Two-speed (50/20 h.p.) electric motors or 40-h.p. gas engines are customarily used for power equipment. Standard rig transmission of power to the sucker rods is customarily employed, though reduction gear units are finding increasing use. Over-all above-ground efficiency of the rig, determined by measuring the electrical input to the motor with a watt meter and the power delivered to the rods with a dynamometer, is found to range from 15 to 65 per cent. Power losses in a rig do not increase in proportion to the power throughput, so that higher loads generally result in higher efficiency.

Proper counter-balancing of the weight of the rods greatly diminishes the maximum force that must be applied. A method of computing the proper amount of counterbalance to use is outlined and a table is given showing the amount to use under varying conditions of depth, gravity of fluid and size of pump. Various types of counterbalances are described and their respective merits discussed.

A study of sucker rod failures has shown that most failures are near the surface, though buckling often causes breakage just above the pump. Use of rods of larger cross-section complicates the problem of counterbalancing. The trend is rather toward the use of steel or heat-treated rods of superior strength. Frequency of breakage of rods is found to decrease with age. Results of a study of variation in acceleration and rod stress at different parts of a pumping cycle are given.

Volumetric efficiencies of plunger pumps are found to range from 2 per cent to 105 per cent, averaging about 31 per cent. Causes of low efficiency are found in valve and plunger leakage, displacement in excess of potential production of the well, and ineffective gas anchors.

Tickell, F. G., 530.1

"Capillary Phenomena as Related to Oil Production"

Am. Inst. Mining & Metall. Engineers Technical Publication No. 138, October, 1928, 12-pp. Reprinted in Oil & Gas Journal, Oct. 18, 1928, p. 172.

In this paper, the author briefly reviews the physical conditions within an oil reservoir sand, which influence drainage, and then discusses the mechanics of fluid movement through sand: particularly in its relation to the so-called "Jamin effect", or resistance offered by gas bubbles. A mathematical analysis is given of the amount of work performed in deforming gas bubbles in passing through the sand pores. It is shown that oil froths consisting of a multitude of small gas bubbles enclosed in oil films, and confined within an oil sand, may offer a high resistance to displacement. A detailed classification of oil reservoir systems, according to the type of reservoir and the nature of the expulsive forces, is given.

The author concludes that in a reservoir of "open type", rate of flow may be a function of hydraulic flow alone, or a continuous function of both hydraulic flow and release of gas pressure. The presence of gas bubbles, water globules, emulsions and foams are said to restrain movement of fluids, in that they are equivalent to an increase in the viscosity of the fluid. Due to increase in oil viscosity as dissolved gas escapes from it, the resistance to displacement increases as the force available for expulsion of the oil diminishes. Decline of production from the "closed type" of reservoir may usually be expressed as an exponential function of time. The decline of production from the "combined type" of reservoir is a very complex function of time, and has never been mathematically expressed. Ultimate recovery from the "closed" or "combined" type of reservoir should be increased by repressuring methods. Estimates of ultimate recovery, drainage areas, proper well spacing, etc., must be based on recognition of the combined type of reservoir and the complex relations of its variables.

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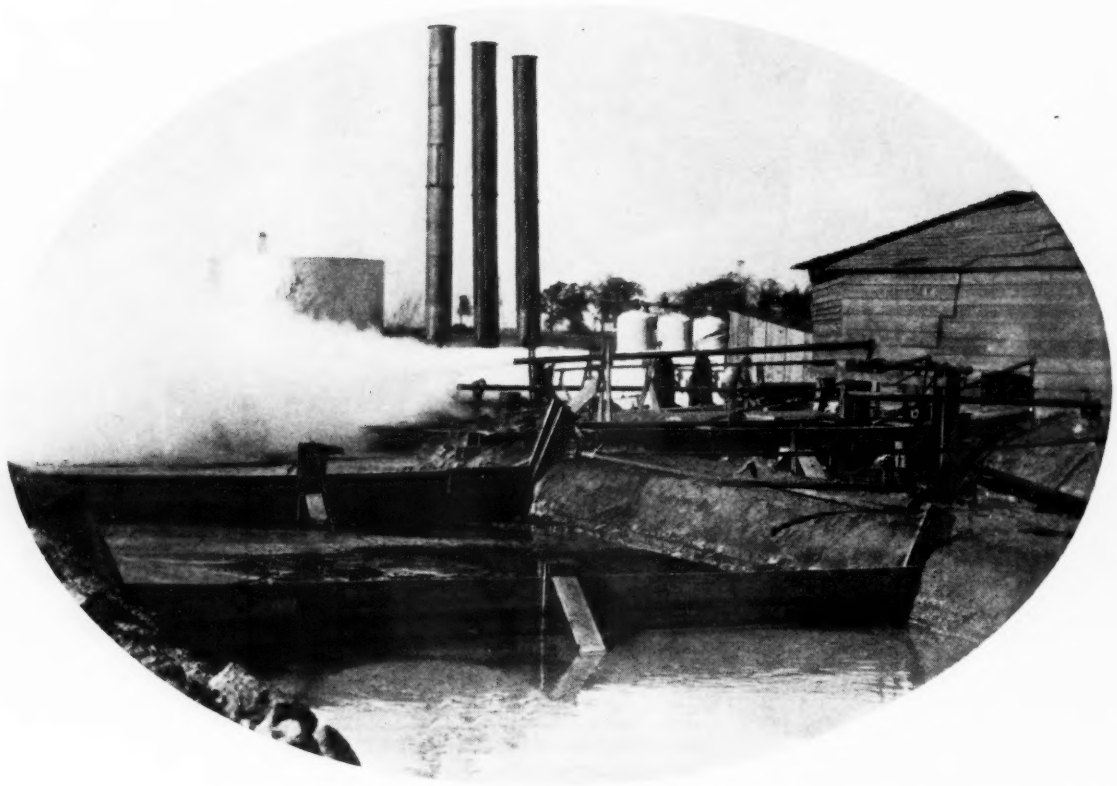


Bigger and more elaborate settling pits help to keep the mud at a more constant weight, and by settling out heavy particles, add to the life of the pumps

Faster Drilling Time in Seminole Field Since Engineering "Got on the Job"

By John Power
N. P. N. STAFF WRITER

TULSA, Jan. 7

BIGGER, faster and more economical drilling equipment and drilling methods have come since Seminole was opened up two and a half years ago.

Engineering sciences has been applied to field problems, using the terrific test of competitive drilling as a proving ground.

The field, or "practical" man, as he loves to call himself, has taken unto himself more and more of the basic laws of the engineering sciences. This more thorough knowledge of the job as a whole has spread itself throughout the field workers to drillers, roughnecks, tool dressers and roustabouts. This has resulted in a more intelligent handling of equipment, with resulting longer life and increased efficiency for it.

When Seminole opened up the usual drilling practice called for about 3500 feet of rotary hole, after which the rig was standardized and the hole completed with cable tools.

While this was no great depth to drill, the digging was tough, and the competition fierce. Oil was at good price, and contractors had to satisfy the operators, who cried and cajoled for speed, speed, and yet more speed. To stand the strain of faster drilling, and harder going, the drilling equipment had to be strengthened all along the line. In some cases it had to be made heavier, in some the quality of the material had to be improved or the material changed.

When drilling is speeded up, one of the first parts of a rotary drilling outfit to feel the strain is the drill pipe. Drill pipe has developed from a 6-inch 22-pound, all-steel pipe to a 6-inch 25-pound, steel alloy pipe, nearly 30 per cent stronger than the original. The joints have been lengthened from 20 to 22-foot average to an average of about 28 feet. Many contractors have eliminated, or are eliminating, the use of collars between joints, using tool joints throughout for the added stiffening which the tool joints give the string.

With heavier pipe to handle, the size and strength of the rotary and the draw works had to be stepped up. During the development of the Seminole or 9N-6E pool, draw works with 6-inch shafts were the common equipment. The draw works of this period were equipped with babbitted journals, of the type which had been used by the industry for years. At the present time draw works with 7½-inch shafts, equipped with roller bearing journals are considered the thing.

Changes in the manufacture of the rotary tables have been no less radical. Instead of the No. 10 rotary with babbitted journals, and many cast iron parts, a No. 12½ rotary, roller bearing throughout, and all steel, is furnished for the drilling well today. To handle the greater weight, the size of the wire drilling line has been increased from 1 inch to 1⅛ inches.

Larger engines have, of course, been needed to meet the demands of the heavier weights. The old familiar 10 x 10 twin drilling engine is giving

From an article by C. O. Willson in
The Oil and Gas Journal, issue of November 29, 1928

"The only remedy suggested for the fuel oil problem is a further increase in cracking facilities for the purpose of reducing the quantity of fuel oil available."

All competent authorities agree on this point The surest way to help stabilize the industry—and at the same time increase the net refinery profits—is by the Dubbs Cracking process—operating by the non-residuum method, which means the greatest amount of gasoline from the least amount of crude

Universal Oil Products Co
Chicago, Illinois

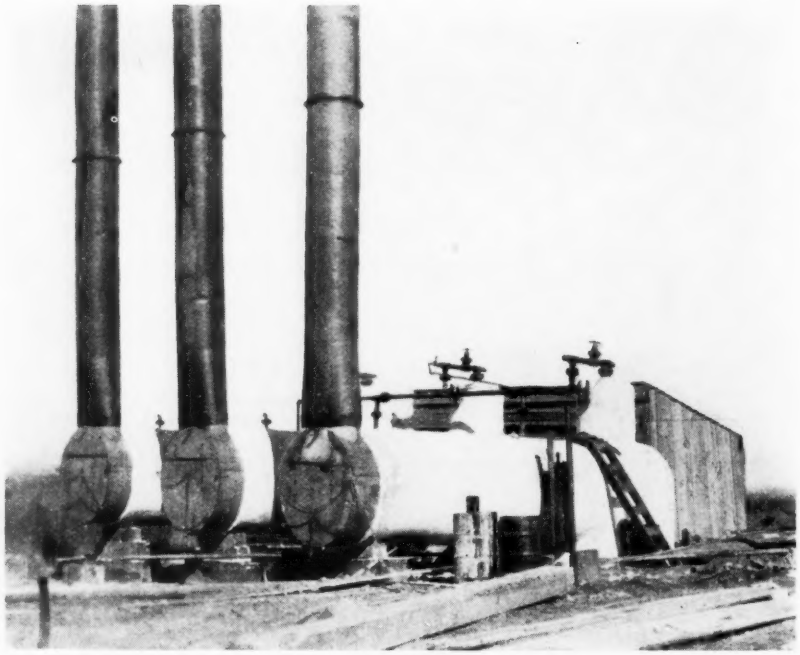
Dubbs Cracking Process
Owner and Licensor

way to the 12 x 12, some of the latter being equipped with piston valves instead of sleeves. Many engines come equipped with roller bearings, for peculiarly enough, the oil industry, of all industries, has warred less against the friction inefficiencies in its own equipment than many others. Some engines come equipped with water separators, which dry up the steam before it is admitted to the cylinders. It is claimed for these engines that they are more flexible, and easier to reverse.

Bigger engines to handle bigger drilling equipment require more and better steam, drier steam, and steam delivered at higher pressures. At the start of the Seminole development the 73-h.p. steam boiler was most commonly used. Today boilers of 125-h.p. are used by many contractors. Working pressures on the boilers have been increased from 180 pounds to 250 pounds per square inch.

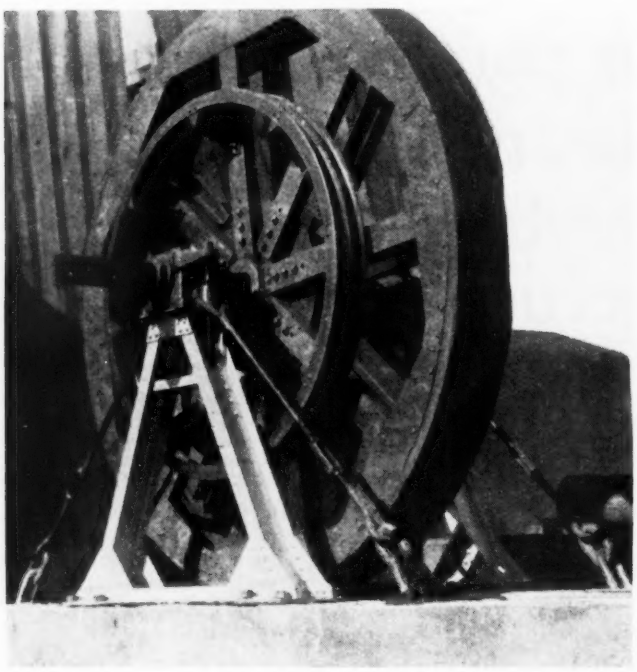
Many improvements have been brought about in the generation and conservation of heat and steam around a drilling well. Many operators are insisting that boilers be heat insulated, and that water heaters for preheating the boiler feed water be used. These heaters, some of which are home made and others of which are "tailor" made, all utilize the heat in the steam after it has passed through either the drilling engine or the pumps. Low pressure burners are doing much to cut down the fuel cost. Regulators have been developed where gas is used as fuel, which are designed to eliminate the boilers' popping off, which is a waste of steam, and hence of fuel and water.

The regulators are connected to the steam manifold, the connection admitting steam against a diaphram which is held in place by an adjustable spring. When the steam pressure is sufficient to depress the diaphragm valves in the base of the regulator the ports are closed enough to decrease the amount of gas admitted to the burners. When an increased consumption of steam decreases the pressure the spring forces the diaphram up, thus opening the gas ports and increasing the fire to a point where the steam pressure is maintained at the predetermined figure.

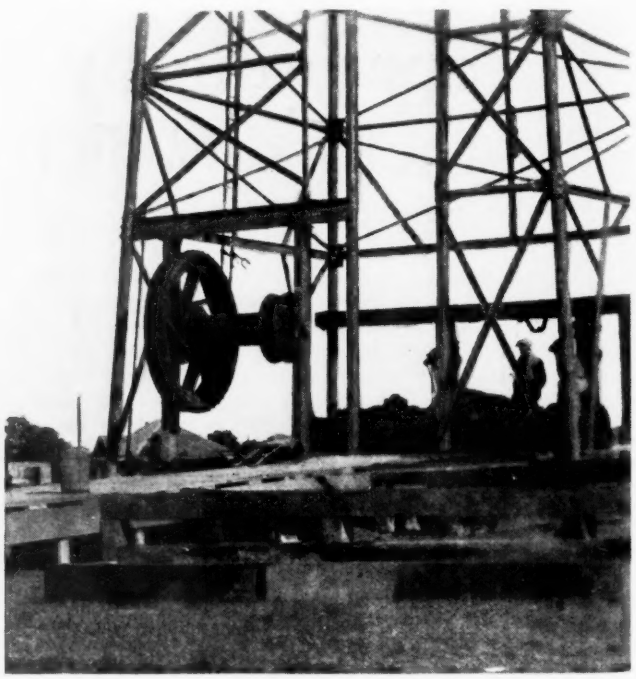


Many boilers are covered with heat insulators of one kind or another, while most contractors use the steam lubricators equipped with water separators

Rigging up has been simplified in many ways by the merging of several units into compact groups which are moved and set up as a whole. Boiler steam outlets are now manifolded, gas and water connections are being simplified, with the elimination of the boiler water injectors. With the passing of the injector has come the advent of the single stage, steam water feed pump, which can be set to keep a constant flow of pre-



Steel rig fronts, set in concrete, are the latest style in the Mission pool. This type of construction lasts the life of the well, besides having a high salvage factor

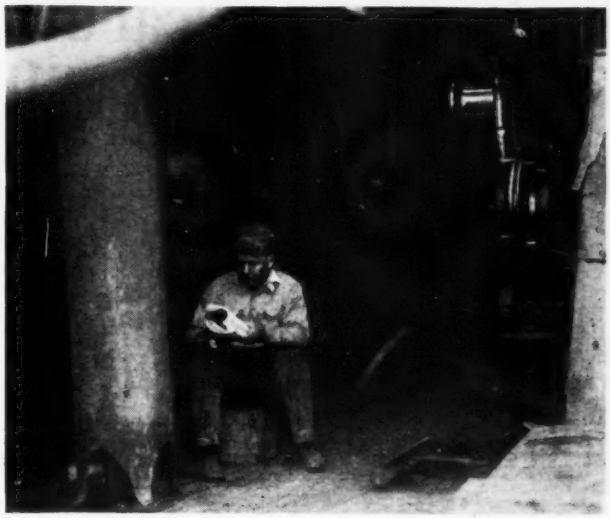


They build the rigs with standard ends in the Mission pool. A lot of time is thus saved when the "swivel-necks" give way to the "rope-chokers," or, in English, when cable-tool men succeed the rotary

heated water going into the boiler, instead of the "one gage-three gages-one gage" system by which the boilers used to be fed. Saving of money, as well as time, has resulted from the unification and standardization of water and gas feed units, as the loss of fittings which used to occur during each moving has been greatly reduced.

With a pump for each "pot," all mounted on the same frame, it is a simple matter to set up the unit in front of the boilers, connect up the unions, and be ready to fire up. Purely automatic water feeds have been tried out, but with the human tendency to rely entirely on the automatic features, the fireman is apt to neglect his boilers, which would prove expensive if not disastrous in the event the feeder went "haywire."

There has been, however, a definite trend toward the elimination of the human element in the design of drilling equipment. Two examples of this are the Halliburton and Hild drilling controls, the former to be used with any prime mover now in use, and the latter for electric power only.



Automatic drilling controls make drilling easier on the driller. Note the absence of brake-weights

With the Halliburton control the torque on the bit is governed by means of clutches on the control shaft. The prime mover drives the draw works through the control, so that, when pulling out or going into the hole, the Halliburton functions as a countershaft between engine and draw works. The control functions by means of a differential gear mounted on the control shaft, and arranged so that, when the bit encounters more resistance than the power assigned to it will handle, the draw works automatically picking up the drill pipe until the bit is clear enough of bottom to function. The Halliburton control is a complete unit, mounted on steel skids and weighing a little more than 9000 pounds.

The Hilde Differential Drive functions on the same theory, i.e. the use of differential gears, but it is applicable to electric power only. Two motors are used, mounted parallel, and direct connected to the drive housing, which contains the necessary reduction gears as well as the differential. These motors operate against each other when drilling, one driving the rotary table and the other the draw works. When the rotary motor is slowed down by harder digging, the other, through the differential gear, speeds up, and picks up the pipe enough to free the bit.

Both of these devices are labor savers in that they reduce the amount of work the driller has to do, but neither of them replace any of the drilling crew. By keeping the amount of torque on the drill pipe at a constant figure, which can be set as high as safety will permit, the inconsistencies of the hand feed are largely eliminated. Inasmuch as the reaction of greater resistance is instantly communicated to the drive. there is less chance of the costly twistoffs occurring when the bit enters a harder strata. It is said for both drives that the driller is left free to supervise the general operation of the rig, as the drilling is done with the brake handle up, and not a brake-weight in sight.

With the hard digging that used to be the lot of the Seminole contractor, the fishtail bit was found to be generally unsatisfactory, and the use of rock bits from the grass-roots down became practically standard. But, of course, it is not all rock from the surface to the pay, and a great deal of time used to be lost in what the drillers called sticky digging, which might be any soft stuff which clogged the cones. Interlocking, or self-cleaning cones, are doing much to eliminate this trouble, thus speeding up drilling, as well as giving the vocabulary of the driller a much needed rest. Of course, with the Mission pool being developed as it is, with more than 100 rigs running, and winter coming on apace with its attendant northers, frozen water lines and horrible roads, there will probably still be heard some expressions of great distaste for the oil business, oil men, oil well drilling as a profession and the world in general as a place to live.

Throughout the development of the Seminole area geologists have been startled at times by the discrepancies in depths at which the marker formations have been encountered in offsetting wells. While it was felt that a certain amount of the crookedness in the holes might account for some of the unusual differences, it was not generally believed that the holes were crooked enough to account for any very great part of it. However, since more and more wells have been "surveyed" with deflections running as high as 50 degrees, the need to keep the holes straighter became apparent.

Production as well as geological troubles began to make their appearance when the wells were put on the pump, as it was extremely difficult to keep the rods together and pump "around the corners" in some of the wells. While the crooked hole business was invested with a certain amount of mystery, it was felt by many operators that the application of too much weight to the bit was responsible for a great deal of the sub-surface wanderings of the tools. Weight indicators which not only tell the driller on tour how much weight he has on the bit at the time, but also tell the tool pusher, by means of 24-hour charts, the story of the day's run, are practically standard on wells drilling in the Mission pool today. A careful checking of the weight charts against the trouble records is giving the engineer an opportunity to decide the causes and possible remedies for much of the grief which attends the drilling of any well, and which gets worse the deeper the hole gets.

Mud requirements have called for a mud of about nine pounds weight per gallon. To maintain the proper pressure at the depths to which the rotary drilling was carried, as well as to give a safety factor such as increased pressures would give, the size of the pumps has been increased. From a maximum size of 14 x 7¼ x 14, the pumps have grown to 14½ x 7½ x 18, capable of nearly twice the pressures of their predecessors. One company has developed a mud pump with a compound steam end, which will develop pressure as high as 1400 pounds.

The time required for rig building and rigging up has been reduced. One of the largest companies in the Mid-Continent figures on eight days from date of location to spudding in, as against 11 days allowed when the Seminole boom began. Nearly all the manufacturers of turnbuckle derricks have changed their products to steel. A great deal of attention has been paid to the concrete used as rig corners and rig front foundations, the desirability of getting the proper concrete mix for the soil conditions having been established. Most operators are using steel rig fronts, set in concrete, as this construction will not only outlast the wooden front, but will have a greater salvage value.

Crown blocks have come in for their

Because a dollar is worth no more than what it will buy, the economical dollar, with reference to drilling costs, must produce more results.

Through their speed in making hole, high average footage per set and safe operation, Hughes Cones are effecting a real economy throughout the Rotary fields of the world.

The HUGHES TOOL COMPANY

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share of the thought and study which have done so much in the past few years to improve the drilling equipment. Crown blocks giving a vertical hang to the lines, and permitting the traveling block to be run eight to 14 feet higher in the derrick, have been developed. The sheaves are now as large as 36 inches in diameter, and in some instances are interchangeable with those in the traveling block. The swivels or goose-necks have grown along with the rest of the family, until they are now being built with 3-inch water courses, 4-inch bails, and 5-inch gudgeons.

And so it goes. The interest in doing things better, cheaper and safer has communicated itself throughout the producing end of the oil industry to an extent never before the case, be the good old days ever so glorious. And as a hope for and indication of what the future may develop can be cited the feeling of operator, engineer, driller and field man that they have just begun to learn.

Veteran Welcomes the Change

IN DISCUSSING drilling improvements to members of NATIONAL PETROLEUM NEWS' *staff J. C. Saunders, fireman on drilling wells in the Mission field in Seminole, wrote down the following as his impressions of the changes which have taken place in the rotary drilling profession since the early boom days of the field in* 1926. *Mr. Saunders has been a follower of the oil fields for* 17 *years. His interest in new and improved methods and equipment is typical of the attitude of field men generally.*

SINCE the Seminole boom of 1926 there have been a lot of improvements. At the beginning of 1926, 200 pounds of steam pressure was about the maximum. But with the introduction of larger pumps steam pressure had to be increased and boiler manufacturers designed boilers to meet the increase. The Oil Well Supply came out with a Canadian type boiler of 250 pounds pressure and the Broderick with a 250-pound boiler. Then steam lubrication, which has always lagged a little behind, took an improvement, a sight feed lubricator being designed.

Then the National Supply Co. brought out a new 12 x 12 enclosed roller bearing engine with a water separator which takes practically all the water from the steam. Most of the leading supply houses came out with 18 x 7 x 14 mud pumps that both increased the volume and pressure of mud through the hole, thus insuring a better cleaning of the bit and hole.

There have been quite a lot of specialties come out that have helped. The Martin-Loomis weight indicator, which records the weight carried on the bit at all times, and the number of times the bit is changed. The driller can now watch the gage while drilling and tell the amount of weight on the bit. Also when pulling on pipe he has a knowledge of the strain he is carrying on the derrick. The method of ram and cram was used in 1926, in other words, "Give her all she can stand." Thus when the bit struck a sloping rock she might "go over towards Jones," or follow the lines of least resistance. But by watching the weight on the bit the driller is able to hold it up, and drill a lot straighter hole.

Burners and regulators are now coming into their own, as fuel has always been cheap in the oil field, there has been little thought given it. But now the major companies are requiring the contractors to use modern low pressure burners and regulators. Thus instead of boilers popping off when steam was not required, and having no steam when it was needed there is now an even pressure maintained at all times. The larger companies are now furnishing a coat of asbestos for boilers so that a larger percentage of fuel units are saved. Some of the more modern contractors are standardizing all boiler connections, as well as the principal equipment. Now when a rig is moved on the location a couple of winch trucks are used, instead of a herd of cotton pickers milling around.

The day of the injector is over, and one contractor has boiler feed pumps and light generator bolted on a steel frame that is leveled up in front of the boilers and they are ready to fire up. Rock bits are used more than any other, but disc bits are used to an advantage in such places as the St. Louis pool. There is now a bladed disc bit with a side reamer that insures a full gage hole, which is a great improvement over the old two bladed type, which might be used to make a lot of hole with, only to have to ream it all out.

The care of the mud has improved, and lost returns are not now what they used to be. To insure good results rotary solution should be about 9¼ pounds per gallon. Slush pits are now divided into more sections than formerly, so that shale is not circulated through the pumps, and a great saving in pump parts is effected.

I would say that the last three years have seen more improvements than any other period of the rotary's history since the rock bit came out, which is still the greatest contribution to the oil fields. Cooperation of supply houses with the needs of the field and standardization have been big factors. There are several electric rigs now in use, but the average roughneck has not been bred up to them, so that they are still a bit of a mystery.

New Equipment

Hydrocarbon Apparatus, Inc., 405 South Hill street, Los Angeles, has put out literature describing a new gas and oil separator. This separator can handle large as well as small volumes of oil and gas with equal efficiency. The scrubbing and separating system is designed so that all oil taken from the gas does not again enter the path of the gas. The gases are expanded six times and scrubbed four times through perforations.

* * *

The Brown Instrument Co. is now located at Room 1502 Roebling building, 117 Liberty street, New York City, removing from 50 Church street. The move was made Dec. 19.

This change was made necessary by the need of larger quarters to provide for the increased staff now attached to this district office.

* * *

Johns-Manville Corp. has announced it has recently purchased the Celite Products Co., also manufacturers of insulation and other material. Announcement is made by Theodore F. Merseles, president of Johns-Manville.

* * *

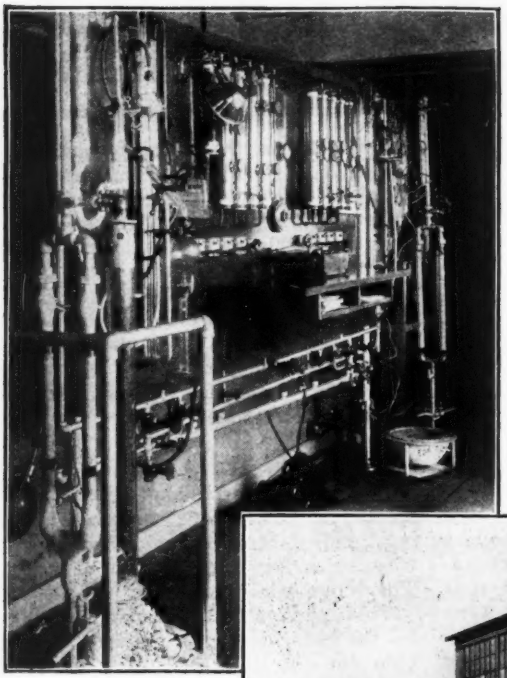
Joseph Reid Gas Engine Co., Oil City, Pa., has off the press bulletins 41, 42 and 43, describing and illustrating its Timken bearing equipped pillow blocks, its centrifugal water pumps and reverse rigs respectively.

The pillow blocks are designed particularly for oil field service on reverse and one way rig shafts, countershafts and similar installations.

The centrifugal pumps, designed for use in circulating water through the water jacket of the engine cylinder, include among their advantages, Timken roller bearings which save lubricating costs and maintenance, and keep the pump shaft rigid and in perfect alignment, providing smooth operation.

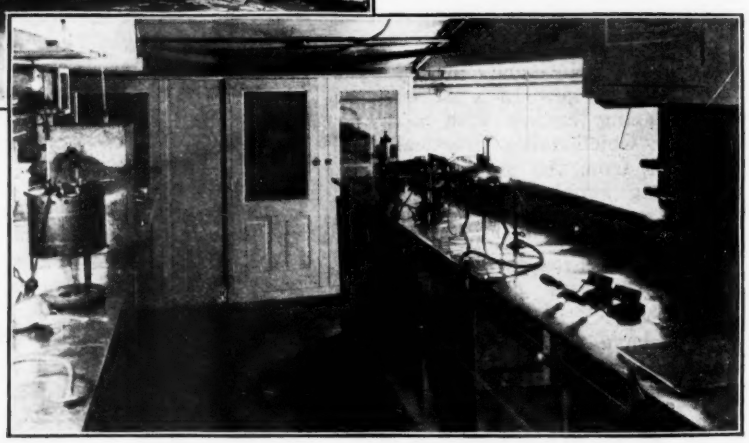
For heavy duty work, the company has designed the new reverse rig equipped also with Timken tapered roller bearings. This rig, No. 40, incorporates the latest improvements in reverse rig construction. Among its advantages are the continuous and positive absorption of both radial and thrust loads, the company claims.

HUNDREDS OF



are in operation in the largest refineries in the United States and foreign countries.

The design of Badger Equipment is based on thorough fundamental knowledge of the principles of fractionation; careful study of the particular requirements of each problem; complete research and analytical work, and very extended practical experience and data.



E.B. BADGER & SONS

NEW YORK TULSA

Visiting Around the Refineries

By Paul Truesdell

National Petroleum News

FILTERED red oil with a green cast, made from South Texas crude, is being offered to the trade now by Texas Mexican Oil & Refining Co. The process by which it is made is a result of two years of research by G. A. Mattson and James F. Ryan who recently installed a complete new filtering plant consisting of eight percolating filters and several contact filters at the Laredo, Texas, refinery.

The Texas Mexican Oil & Refining Co. was organized with local capital in Laredo when the Mirando field was opened. Under a recent reorganization, Mr. Mattson became vice president and general manager and Mr. Ryan general superintendent. Immediately they set up the equipment to make the type of lubricating oils mentioned above and started overhauling the plant which is about completed.

Harry P. Dunn, 624 South Michigan avenue, Chicago, is the sales representative in the north. He says the advent of cold weather in early December put the Laredo plant behind with orders for the management's favorite oil which has a below zero cold test and all outward characteristics of a compounded motor oil made from Pennsylvania and Oklahoma neutrals and bright stocks.

* * *

THE Russians are branching out in the refining industry.

From time to time announcement has come of purchase by the Soviet government, usually through the Amtorg Trading Corp., its agent in New York, of various sorts of refinery equipment as well as oil producing tools and machinery. Now the Russians have ordered six Jenkins cracking units for installation in their country, according to Kent W. Bartlett, vice president of the Graver Corp., which has the selling rights for the process.

Some companies have hesitated to do business with the Russians and those who have dealt with them have pretty generally demanded their money on the barrel head, and gotten it too.

* * *

GAS oil is one of the refiner's products for which it appears there will be a profitable market for years to come, regardless of changes in the petroleum picture.

First, it is profitable usually to crack gas oil into gasoline; second, gas oil is salable as a material for making fuel gas or enriching water gas; third, it bids fair to be in good demand—increasing good demand—as a fuel for domestic heating equipment and fourth, there is a steady increase in the use of diesel and semi-diesel engines for all kinds of stationary power purposes. In addition, there is the diligent development and research work that is being done to bring out a satisfactory engine of the diesel type for use in aircraft and automobiles.

There has been a very remarkable radial diesel engine developed by Packard, which was recently described in a paper by Capt. L. M. Woolson of that company. Captain Woolson points out many advantages of this engine over the gasoline power plant for aircraft.

It seems unlikely, however, that the diesel engine is going to supplant the gasoline engine to any great extent for automobiles unless some way is found to make it as easy to start and as flexible and snappy in operation as the gasoline engine, even though it is acknowledged to be far superior to the latter in thermal efficiency.

Anyway, the refiner apparently need not worry about a profitable market for his gas oil.

* * *

THERE is no rest for the refiner in the race to make a good anti-knock fuel.

After halting for awhile and even slipping back slightly, it appears that the trend is again setting toward higher compression ratios in automobile engines.

An article in Automotive Industries describing the newest models of the Hudson and Essex lines states that the compression ratio of the former has been increased to 6 to 1 and that of the latter to 5.75 to 1. Only one other car manufacturer so far as I know has ever put out a car for ordinary use with as high a compression ratio as 6 to 1. That was the Chrysler and I am told that the compression was lowered somewhat in later models due to difficulty experienced in some territories in getting proper fuels for such a high compression car.

It speaks well for the gasoline being put out by refiners generally that the Hudson-Essex manufacturers recommend the use of the regular "standard fuels" in their cars. Perhaps the spark is retarded to the point where some of the advantages of the high compression pressure is lost.

There seems to be no doubt that the refiners will be called on for higher and higher grade fuel from an anti-knock standpoint because it appears that the motor car manufacturers will keep on shoving up the compression ratios of their cars in order to get the greatest possible efficiency, only halting the upward march if they find they have outrun the fuel that such high compressions require.

The refiners will strive to see to it that suitable fuel is provided.

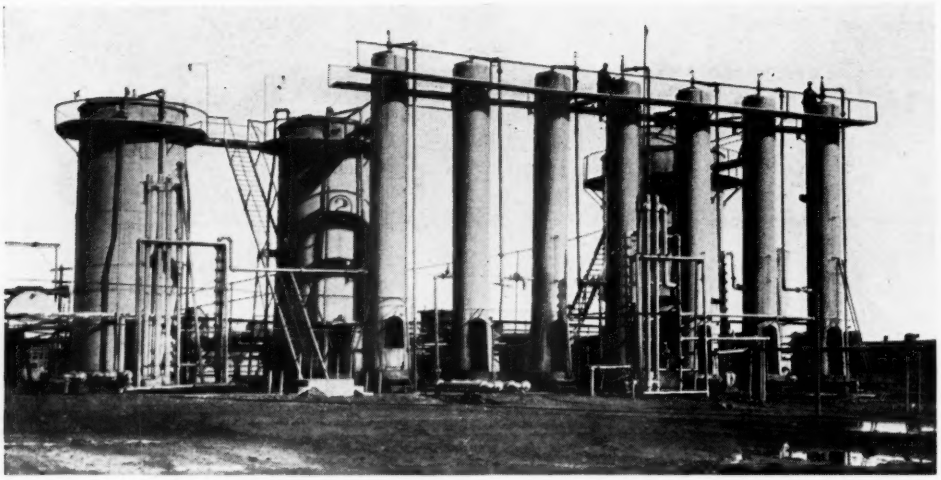
* * *

MUCH work is being done right now to determine the rightful economic place of vacuum distillation in the refinery scheme. Authorities seem to agree that because of the great expense of constructing such equipment its use is not justified under all conditions.

W. A. Peters Jr., and J. V. Jirasek in a paper presented before the American Petroleum Institute Dec. 3-6* stated, "There is no essential difference between vacuum and atmospheric or single and double stage operation."

Refiners considering installation of vacuum equipment are eagerly watching the construction of such units in other refineries to see whether or not they develop the results expected at a profitable cost of operation.

*National Petroleum News, Dec. 5, 1928, page 93.



Old and new style cracked distillate treating plants. At the left are the old style batch agitators and at the right the new continuous treating towers

We Get 70 Per Cent Light Oil Yield

By D. F. Gerstenberger*

Mr. Gerstenberger will be remembered as the contributor of a series of articles on practical refinery operation that were published exclusively in NATIONAL PETROLEUM NEWS *in* 1927 *and* 1928. *Early in the past summer he was employed by the creditors' committee which was handling the affairs of the former American Refining Co., to operate the refinery to make a profit. The accompanying article is drawn from his experiences at the American plant.*

WICHITA FALLS, Tex., Jan. 3 THERE are undoubtedly periods in the history of every refinery when reorganization is necessary to turn loss into profit. Such is the period which the American Refining Properties, previously the American Refining Co. has passed through, and it is coming to the front with no uncertain strides.

The plant, located on the outskirts of Wichita Falls, is served by two railroads, and has several pipe line connections. It is operated entirely on North Texas and Oklahoma crudes, producing a large percentage of refined products, being capable of converting 70 per cent of the crude into gasoline and kerosene.

All equipment is modern, as the average refinery goes, consisting in the main of a battery of crude stills, a pipe still, two Cross cracking stills, four Dubbs cracking stills, an absorption plant with the necessary treating and rerunning equipment. In addition is a 60-car loading rack and an excellent tank car repair shop. The plant property consists of approximately 180 acres of land which includes the crude storage tank farm. The actual crude capacity of the plant is 7000 barrels a day with 3300 barrels daily cracking capacity.

The crude is run through a battery of five continuous stills, taking off an average of 38 per cent of gasoline and 8 per cent of kerosene. The topped crude is then split, part of it flowing hot to the pipe still, and part going to storage for later use as charging stock for the Dubbs stills. The pipe still is operated to produce a sufficient amount of gas oil for the Cross cracking stills, the temperature being carried high enough to break the viscosity of the remaining oil, which is sold as a low cold test fuel.

The straight run gasoline requires the usual doctor treatment to give a good odor, doctor sweet gasoline. The kerosene is treated with both acid and doctor, giving an excellent grade which will pass all domestic and export specifications.

The distillates obtained from the Dubbs and Cross stills are blended, treated and rerun for finished gasoline, and the gasoline so obtained is further blended with the gasoline obtained from the crude stills for shipments of all different grades. Export grades of 375, 390 and 400 degrees F. end point gasolines, as well as the customary U. S. Motor grade, are manufactured. All gasolines shipped from this plant meet the doctor and corrosion tests.

The company retails through its own stations what is in reality a premium gasoline at regular service station prices. Such gasoline is 100 per cent cracked, having a benzol equivalent of approximately 40 per cent, with an initial boiling point of 100 degrees F. or under during the winter months, and an end point of about 420 degrees F. It is doctor sweet, passes the corrosion test, and is water white. This is a double rerun, double treated, closely fractionated product, and road tests over a period of time prove it to be a gasoline of considerable anti-knock value, giving excellent mileage.

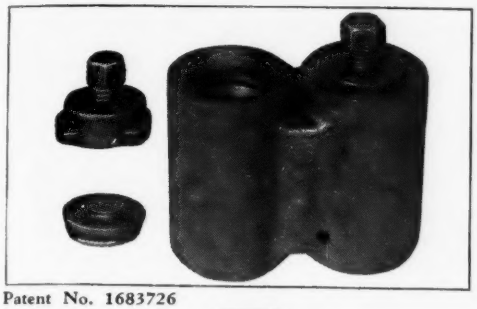
Under the new management, several improvements have been added to increase the yield of refined products and at the same time improve the quality of these products. Such improvements have had to be carried out under a program of rigid economy, and consequently a good deal of obsolete equipment which was present on the ground has been placed at points of advantage, and with some reconstruction has been put into service in a way to make it a paying investment.

THE most noticeable and far-reaching of such improvements are the addition of a hot feed system to the Cross stills which has doubled the total feed capacity of these stills, and the installation of an absorption plant.

Some 10 by 15-foot reaction chambers from the Dubbs stills, the safe operating pressure of which had been reduced to 100 pounds, but which were more than satisfactory to operate under 25 to 40 pounds fractionating pressure on the Cross stills, were used for hot feed tanks. Two second hand hot oil pumps were pur-

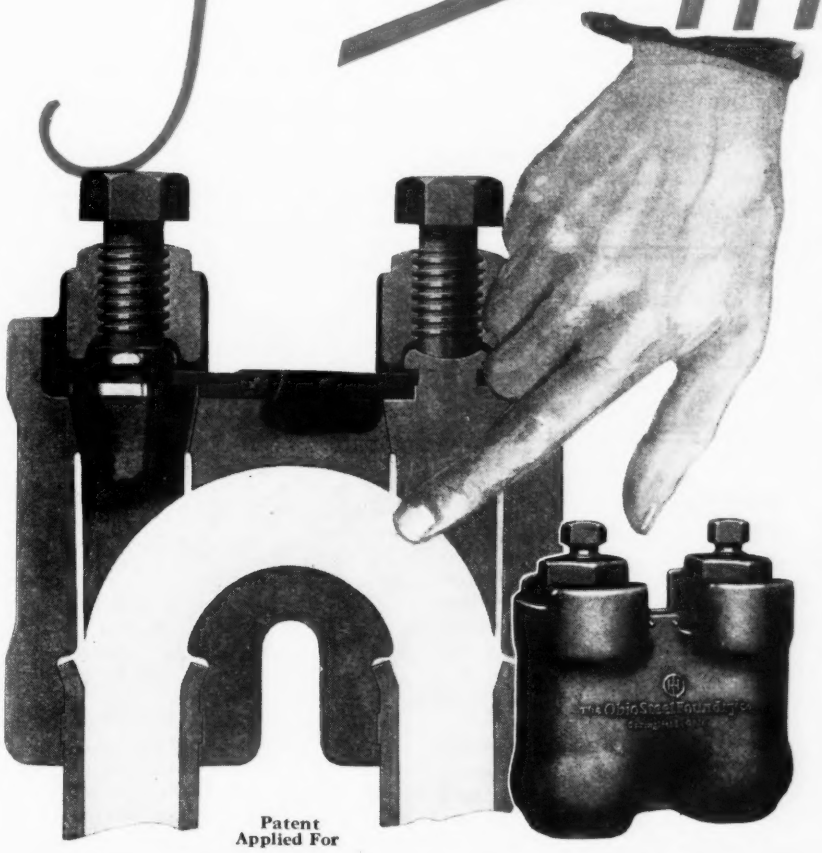
*Refinery manager American Refining Properties.

THEN OHIOLOCK



Patent No. 1683726

NOW! OHIOLOCK Frictionless



Patent Applied For

Three years ago "Ohio" set a new standard of Return Bend efficiency with the introduction of the "Ohio-Lock."

Now—"Ohio" has contributed another return bend improvement of equal importance—"The Ohio-Lock Frictionless"—a return bend which successfully solves the problem of pressure drop.

This feature combined with the quicker acting Ohio-Lock closure, offers an economical, efficient and safe answer to all return bend requirements.

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Plants in
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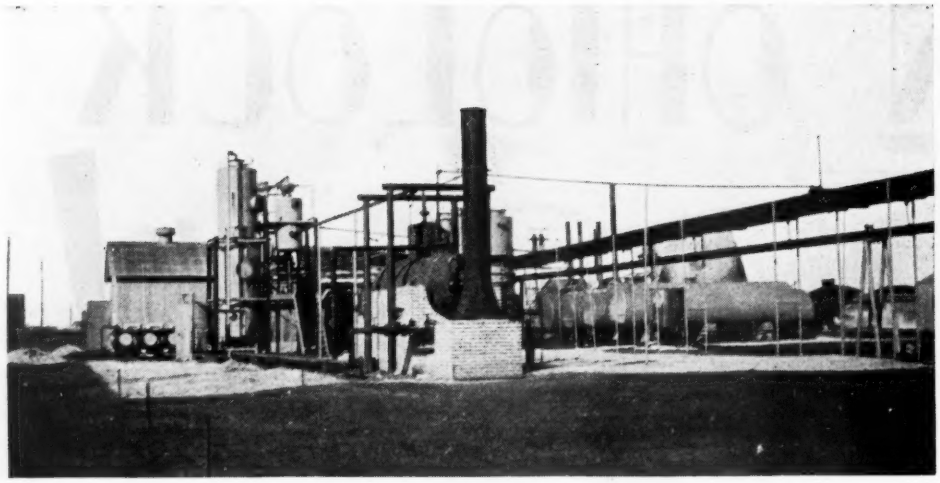
LIMA



The new absorption plant built at small cost at the plant of the American Refining Co.

chased at a reasonable figure from one of the larger companies, which was replacing them with others capable of greater pressures. The outcome was an efficient hot feed system for approximately one-fifth of the cost of all new equipment.

By the purchase of a compressor, and six exchangers, some pipe and valves, an absorption plant was built for about one-half the actual cost of a complete new plant of similar capacity. This plant leaves nothing to be desired from the gas scrubbers on through to the bubble tower absorber.

It is capable of handling over 2,000,000 cubic feet of gas a day and can produce up to 10,000 gallons of gasoline a day without the addition of any more equipment. The amount of gas available from the present refinery operation is yielding better than 1000 barrels of absorption gasoline a month in tank cars, and in the warmer summer months this quantity should be more than doubled. This gasoline was previously lost by evaporation or was burned under the stills in the form of gas.

The present program for improvements consists of the installation of three additional bubble towers on the crude and rerun stills which will help to increase further the yield and improve the quality of the refined products.

ON THE LAZY BENCH

National Petroleum News

So, So!

Two of your daughter's old evening gowns, sewed together, will make an excellent pen wiper.

—The Marion Line

* * *

"How is your son getting along in the Ford factory, Joe?"

"Fine, Ed—he's been promoted."

"Promoted? You don't say!"

"Yes! He used to put on chassis nut number 34, and they jumped him right up to chassis nut number 37."

—Skelly News

* * *

"Wonder if the author of the slogan, 'Made as 48,040 housewives showed us,' ever heard of the adage, 'Too many cooks spoil the broth?' "

—Printers' Ink Monthly

* * *

Servant—There's a man to see you, sir.

Master—Tell him to take a chair.

Servant—He has, sir. He's taken them all, and they're moving out the piano now. He's from the furniture store.

—Skelly News

* * *

"He claims his wife was intractable, your lordship, so he beat her into subjection with a golf club."

"In how many strokes?" asked the judge.

—Magnolia Oil News

* * *

A man now-a-days says it used to be his wife who could make him a necktie from one of her old silk dresses, but now she can make herself a dress out of one of his silk neckties.

—Magnolia Oil News

* * *

"Doesn't Joe ever get tired of his wife's continued sulkiness?"

"I think not. He says when she's good natured she sings."

—Magnolia Oil News

* * *

Wifie: "I want to do some shopping today, dear, if the weather is favorable. What does the paper say?"

Husband: "Rain, hail, thunder and lightning!"

—The Diamond

* * *

Co-ed—Stop that man; he wanted to kiss me.

Cop—That's all right, miss, there'll be another along in a minute.

—Skelly News

* * *

The Changing World

"Here's a dime, son. Get yourself an ice cream soda at the corner saloon, then stop at the corner drug store and bring your old man home."

—The Marion Line

* * *

Dora ain't so dumb, but she still believes that "bumper crop" has something to do with traffic and pedestrians.

—Our Sun

* * *

A perplexed porter was explaining an unprecedented situation to the Pullman conductor.

"But, Captain, the stepladder's missing; who took it? And why? And how?"

"But who would want to steal a Pullman ladder?" expostulated the conductor.

"I don't know, but she's gone," responded the porter.

At this juncture a passenger occupying an upper berth for the first time, overheard the conversation, parted the curtain and remarked genially:

"Here, porter, you may use mine. I won't need it till morning!"

—Skelly News

* * *

Due Tell!

He—"This dining-room table goes back to Louis Fourteenth."

She—"That's nothing. My whole sitting-room suite goes back to Sears-Roebuck on the fifteenth."

—The Marion Line

* * *

"Rastus, I'm sorry to hear that you've buried your wife."

"Yassuh, boss, ah just had to—she was daid!"

—Skelly News

Natural Gas as Source of Benzol Attracts Commercial Notice

By George A. Burrell*

Colonel Burrell is one of the country's authorities on natural gas and natural gasoline. He has been working with them for years, both commercially and in a research capacity. He was one of the men directly responsible for developing methods of obtaining helium from natural gas during the world war. What he has to say about the possibilities of obtaining benzol commercially from natural gas is interesting.

METHODS for producing benzol (C_6H_6) from natural gas have now reached a point where they are attracting commercial attention. The process proceeds from the knowledge, long known, that the paraffin hydrocarbons can be polymerized to make benzol but only recently has enough attention been given the matter to ferret out the industrial possibilities. The stimulating factors have been the immense amounts of natural gas available and the demand for benzol as an antiknock fuel.

Early work was that of Worstall and Burwell[1] who decomposed heptane and octane at 900 degrees C. and found aromatics and other hydrocarbons in the products. Bone and Coward[2] found indications of benzol in the cracked products when they cracked methane at 800 to 1200 degrees C. A. Williams-Gardner[3] found benzol in the products when he cracked ethane at 750 degrees C. It resulted, he states, from acetylene formation and the latter's polymerization to benzene, thus $3C_2H_2 = C_6H_6$. Davidson[4] found that iron, cobalt and nickel inhibited aromatic formation from natural gasoline, and speeded carbon and hydrogen formation.

Kabelac[5] cracked paraffin wax at 800 degrees C. and obtained 18 per cent of black tar containing benzene, toluene, naphthalene and anthracene. At 600 degrees C. no aromatics were found, the products being heavy asphalt, gases and soot. Hurd and Spence[6] found that aromatic formation became appreciable at 700-750 degrees C. when they cracked isobutane in a pyrex tube. Zanetti, Egloff, Leslie and Davidson[7] decomposed propane and butane, and ethane and propane and found that aromatic hydrocarbons appeared at 750 degrees C.

As far as the mechanism of paraffin decomposition and the formation of high molecular weight products like benzol is concerned, the course of the reaction involves a splitting of the hydrocarbon and then a polymerization of the split products. If split far enough, methane goes to carbon and hydrogen, thus

$$CH_4 \rightleftarrows 2H_2 + C$$

Many investigations have shown this. Mayer and Altmayer[8] found that at 850 degrees C. methane was almost completely decomposed upon reaching equilibrium. This means a relatively long time of heating. Intermediate splitting involves the formation of the unsaturated residues CH, CH_2 and CH_3. These have a transient and fleeting existence and readily combine to form other products, among them benzol. This is probably the course of the reaction. The older idea of Berthelot's[9] that acetylene is first formed and then polymerizes to benzol, thus,

$$3C_2H_2 = C_6H_6$$

is not given much credence at the present time.

WHETHER pressure helps the reaction or not depends upon the extent to which it aids polymerization and how far this effect is counterbalanced by the negative effect of pressure upon the splitting part of the reaction. Our best guide is Le Chatelier's principle which states that pressure aids those reactions which are accompanied by a decrease in volume.

But the Le Chatelier principle only reaches its full effect in equilibrium reactions and it is certain that the paraffin→aromatic reaction does not come to equilibrium in the true sense of the word. If heating is prolonged carbon is formed. Intermediate stages of equilibrium may exist as shown by the work of Pease and others.

The author is speaking of that part of the reaction that takes place in the gaseous phase; obviously pressure can have no effect on the liquid molecules. Furthermore, he is speaking of pressure effects, per se, and not temperature effects in the guise of pressure effects.

Of course pressure has a profound effect on cracking operations in general by raising boiling points and keeping more oil in the liquid phase so that heat transfer is better and the throughput can be increased. Similarly in the paraffin→aromatic synthesis pressure will aid the reaction but to a less extent because of the higher temperatures and pronounced gaseous nature of the reaction. There are probably little or no substances in the liquid phase. On the other hand, pressure will squeeze the molecules together and permit of the operation taking place in a smaller apparatus.

IN EQUILIBRIUM reactions the paraffin should finally go to carbon and hydrogen or probably to methane, carbon and hydrogen, as pointed out by Cantelo, but intermediate or quasi stages of equilibrium can exist as shown by Pease and Durgan[10], thus,

$$C_2H_6 \rightleftarrows C_2H_4 + H_2$$

at temperatures of 600, 700 and 750 degrees C.

We thus see at temperatures not far removed from each other one can get carbon and hydrogen, or gaseous products without carbon, or a mixture rich in aromatics, and undoubtedly various combinations.

In recent work by Franz Fischer[11], of synthol fame, he shortened the period of heating methane and obtained naphthalene, anthracene, phenanthracene and other solid cyclic hydrocarbons in the tar. Benzol, toluol and xylol were found in the light oils. On the other hand, a prolonged heating of methane produced hydrogen and carbon. It is the old important question, met with in commercial cracking operations, of time and temperature. For instance, in so-called flash cracking operations of today, the cracked oil is withdrawn quickly from the reaction chamber and coke[12] is reduced to an astonishingly low figure.

At one refinery at least, the furnace and transfer temperature of the cracking units of 1500 degrees F. and 850 degrees F. were raised to 1700 and 940 degrees F. respectively. The

1 Am. Chem. Jour. 19, 1897, P. 815-845.

2 Jour. Chem. Soc. 93, 1908, P. 1197.

3 Fuel in Science and Practice, 10, 1925, P. 430.

4 Chem. Met. Eng., 10, 1918, P. 901.

5 11th Report Fuel Tech. Inst. Czech. Polytech High School. Prague.

6 Bull. Am. Pet. Inst. Sept. 11, 1927. Work done under research fund donated by John D. Rockefeller and Universal Oil Products Co.

7 Ind. Eng. Chem. 8, 1916, P. 674.

8 Ber. 40 (1907) P. 2134.

*Consulting Chemical Engineer

9 les Carbures d' Hydrogen, P. 34-36.

10 Jour. Am. Chem. Soc. 30, 1928, P. 2715.

11 Brenn-Chem., Oct. 1, 1928, P. 309-326.

12 Splitting is scarcely interfered with but polymerization is hindered.

throughput went up 50 per cent for the same product yields. Here a quick blow for a short time does what the same blow formerly did acting over a long time. But because of the quickness of the blow more oil can be processed. It might be mentioned in passing that there is still much to be learned about the cracking reactions. Controlling the pyrolysis is an art still in its infancy. It is probable that there lies inherent in the cracking reactions, for instance, all the factors needed for making the best antiknock fuel and without going to dopes or going to the present disadvantages of vapor phase cracking.

Fischer simply stopped the reaction short of carbon deposition. He obtained 5.7 grams of light oil, 1.1 grams of tar and 3.5 liters of unsaturated gases from 90 liters of methane. This means that 1000 cubic feet of methane would yield about 3.8 pounds of light oil. One half of it was benzol. Brooks[13] states that pure ethane yields about 25 per cent of condensible products at 800-900 degrees C. In experimental work that has been done in this country and abroad yields of 1 gallon upwards have been obtained from 1000 cubic feet of natural gas; the richer the gas the higher the yield. The yields thus become of commercial significance as attested by the fact that considerable activity prevails at the moment on the subject. The reaction should well lend itself to the manufacture of benzol from some of the immense quantities of natural gas now held in check, and to residue gas from gasoline plants.

Basically the reaction is not patentable. It has been known for too long a time that the paraffins, and in fact the olefins and naphthenes also, if heated to a high enough temperature, will be converted in part into the aromatics. It can be calculated, thermodynamically from the Nernst heat theorem, that a temperature of about 850 degrees C. is suitable for the work. This is for methane. The higher paraffins need less drastic heating to produce aromatic hydrocarbons. The reaction and corresponding ones are endothermic and hence are favored by high temperatures. An example is the formation of nitric oxide from the elements.

Some work has been done on the use of catalysts in speeding up the reaction or reducing the heat input necessary. Sabatier and Senderens[14] in their early classical work (1900) on the decomposing of hydrocarbons with heat and nickel found that cyclohexane was reduced to benzene at 280 degrees C. Hence some of the naphthenic gases might respond to the use of nickel. Ipatiev (1900) found that ethane did not form aromatics in the presence of iron at 600 to 700 degrees C. On the other hand Ostromyslenski and Bujenadse[15] (1910) broke gasoline down to some benzene in the presence of iron gauze at 700 degrees C. Nickel simply hastened the formation of carbon and hydrogen. Leslie and Werey[16] (1924) found that the oxides of copper, vanadium, cerium, chromium and aluminum on a paraffin base kerosene at 500 degrees C. had little effect. Gault and Sigwalt[17] (1927) got some assistance from pumice stone and quartz in decomposing ethylene. This has been the experience of many in working with the olefins.

They respond more readily to catalysts than do the paraffins. One inference is that cracked gases in large volume from cracking units can be the source of benzol. In Fischer's work, already quoted, he found hard Berlin quartz best suited for the paraffin→aromatic reaction. Iron gave a better yield but produced more carbon. He also used caustic potash, copper, molybdenum, tungsten, graphite, silica gel and tin.

On the general subject of classes of catalysts for dehydrogenation, hydrogenation, polymerization, oxidation, hydration and dehydration, Taylor's address before the Second International Bituminous Coal Conference, at Pittsburgh, November, 1928, can be read with profit.

13 Jour. Inst. Pet. Tech. 14, 1928, P. 743.
14 Compt. rend., 128, 1899; 131, 1900.
15 Jour. Russ. Phys. Chem. 195 (1910).
16 Motor Fuels, by E. H. Leslie, 1924, P. 324.
17 Am. Office, Nat. Comb. Liquides 2, 309-23, 543-84 (1927).

U. S. Chief Coordinator Joins Indian Refining Co.

CLEVELAND, Jan. 5.—Col. J. H. Graham, president of the Indian Refining Co. with headquarters at Lawrenceville, Ill., announces that Brig. Gen. Henry C. Smither, U. S. A., chief coordinator under the director of the U. S. budget since 1921, has joined the Indian Refining Co. with the title of assistant to the president.

The organizing ability of General Smither shown when he was assistant chief of staff in the service of supply in France during the world war, drew the attention of General Charles G. Dawes to him. When General Dawes was called on to organize and head the new bureau of the budget in 1921, he obtained the assignment of General Smither as chief coordinator.

General Smither organized the Federal Specifications Board which formulates the specifications on which petroleum products for government use are bought. General Smither was born in Fort Sill, Okla., in 1873 and would have had 9 years to serve before he would have been automatically retired from the army. He was graduated from West Point in 1897 and served with distinction in the Spanish-American war and in the Philippines.

New Patents

December 11, 1928

REFINING

Fatty Acid and Soap Derived from Mineral Oil and Process of Making Same—Gellert Alleman, Swarthmore, Pa., assignor to Sun Oil Co., Philadelphia, Pa. Filed July 18, 1925. No. 1,694,461.

Mineral Oil Derivatives and Process of Making Same—Gellert Alleman, Swarthmore, Pa., assignor to Sun Oil Co., Philadelphia, Pa. Filed Mar. 26, 1927. No. 1,694,462.

Mineral—Oil Derivatives and Process of Making Same—Gellert Alleman Swarthmore, Pa., assignor to Sun Oil Co., Philadelphia, Pa. Filed Feb. 6, 1924. No. 1,694,463.

Liquid-Feed Control—Richard Girard Jones, Hynes, Calif. Filed Dec. 14, 1925. No. 1,694,621.

Apparatus for Treating Emulsified Oil—Gustav Egloff and Harry P. Benner, Chicago, Ill., assignors to Universal Oil Products Co., Chicago, Ill. Filed Aug. 21, 1920. No. 1,694,643.

Treatment of Spent Clays—Robert A. Dunham, Long Beach, Calif., assignor to Union Oil Co. of California, Los Angeles, Calif. Filed Oct. 30, 1926. No. 1,694,971.

Emulsifiable Oil—David R. Merrill, Berkeley, Calif., assignor to Union Oil Co. of California, Los Angeles, Calif. Filed June 14, 1923. No. 1,695,197.

Process for Clarifying, Decolorizing, and Neutralizing Oils—David R. Merrill, Berkeley, Calif., assignor to Union Oil Co. of California, Los Angeles, Calif. Filed Feb. 1, 1926. No. 1,695,198.

PRODUCTION

Long-Stroke Pumping Jack—Hubert J. Smith, Long Beach, Calif. Filed July 14, 1926. No. 1,694,402.

Means for Cementing Wells—Arthur Harold Hobart, Honolulu, Territory of Hawaii. Filed Dec. 14, 1926. No. 1,694,419.

Well-Drilling Tool—Lester C. Black, Los Angeles, Calif. Filed Oct. 20, 1924. No. 1,694,679.

Water Head for Drilling Rigs—David Wear McElroy, Kaufman, Tex., assignor to Guy E. Boggs, Kaufman, Tex. Filed June 14, 1926. No. 1,695,019.

NATURAL GASOLINE

Process of Combined Absorption and Fractionation for Recovering Gasoline from Gas—Edwin R. Cox and Dexter A. Cushman, Los Angeles, Calif. Filed Aug. 31, 1926. No. 1,695,139.

Manufacture of Natural Gasoline—Harold E. Thompson, Glendenin, W. Va., assignor to Carbon Chemicals Corp., New York. Filed Apr. 12, 1924. No. 1,695,162.

MISCELLANEOUS

Apparatus for Reclaiming Used Lubricating Oil—Philip F. Millor, Maplewood, N. J., assignor to The De Laval Separator Co., New York, N. Y. Filed Sept. 6, 1924. No. 1,694,478.

Oil-Tank Baffle—Archie R. Peters, Winfield, Kans., assignor to The Guiberson Corp., Dallas, Tex. Filed Feb. 28, 1928. No. 1,694,668.

Santa Fe Springs' First Gasoline Plant Done

LOS ANGELES, Jan. 3.—Completion of the first natural gasoline plant to handle the production from the Santa Fe Springs deep fields has been effected for the Norwalk Co. by J. A. Campbell of Long Beach. It is a 30,000-gallon unit, loaded to capacity with gas from the Star well, which came in the very same day that the plant construction started. According to reports, the gasoline tests 330 end point and 88 per cent recovery.

The installation was completed in record time, being ready for operation 47 days after the ground was broken.

Even before the plant was turned over to the owners, orders were given to the builders to construct an exact duplicate alongside, and construction of the additional unit began Nov. 26 and is expected to be in operation Jan. 13, according to Mr. Campbell.

Code Is Symbol of Industry's Progress

"An Open Letter Written on New Year's Day to the Editors of the Oil Industry's Trade Press"

By Fayette B. Dow

Counsel National Petroleum Association and Western Petroleum Refiners Association and Washington Representative American Petroleum Institute

Dear Mr. Editor:—

I am a constant, if not gentle reader of your pages. But I have rarely, if ever, indulged in letters to the editor. Some comments on the proposed code of trade practices have tempted me to make an exception, which I hope will not prove to be a habit forming practice.

You are entirely at liberty to throw this letter into the waste basket, or if that is already over-flowing, to print it, with the understanding that you are not responsible for the mental vagaries of any of your readers. Or, you may say in an editor's footnote that as my remarks are so unrelated to any of your editorials I must be using a literary form to give expression to something I want to say. That would be partly true.

The code represents in part the oil industry's effort to overcome its own bad habits. That process may prove to be as difficult for an industry as for an individual. But the industry's executives are men of force and character. They can, if they will, show the same zeal, enthusiasm and persistence in operating their properties in relation to the whole industry's welfare that they have shown in operating those properties guided only by the play of company ambitions.

There is one rule of the code which says in substance that the word "price" shall mean what it says, and shall not be simply the most convenient word one oil man can use in lying to or about another. Many men have said to me that if the code can accomplish that one object the whole program will be justified. They would welcome the ability to compete with knowledge of the facts.

BUT I shall not discuss the code in detail. I am not concerned, at this moment, with its details. I am primarily interested in what the code signifies for the whole industry.

The code cannot rightly be viewed as an isolated and unrelated spasm of reform. It is, as I see it, one of several efforts which, although as yet somewhat disconnected, have sprung up quite spontaneously in a comparatively recent period, and which in the future will be recognized as parts of a single larger movement to substitute stabilized order for periodical economic chaos. I might even say that oil men all unconsciously have been trying to apply two great maxims of the old Greeks: "Know Thyself" and "Nothing in Excess," which may be paraphrased by the single words "intelligence" and "balance."

IN HIS open letter championing the American Petroleum Institute Code of Marketing Practices, Mr. Dow makes the same point NATIONAL PETROLEUM NEWS has brought out in its earlier discussions on the code.

This is, in effect, that the oil industry's questionable marketing practices, which are to be remedied by the code, have been an effect rather than a cause—an effect of the neglect by the industry of the fundamental principle of restraining production of gasoline to market demands.

He believes that the drafting and endorsing of the code by the oil industry is a forward step in line with the progress the business generally is making towards a realization that it "has either a common welfare, or no welfare at all."

These other efforts have not been made without substantial changes of heart and of viewpoint, as well. May I refer to some of them?

I remember well the days when the Mid-Continent refiners spent most of their spare moments damning the Standard Oil Co. of Kamiskata for the amount of red ink they were using. Every revision of price or practice they felt sure was intended to put them out of business. What a change to find those ardent individualists reversing that mental process, asking themselves the extent to which they were contributing to the general overproduction, studying the probable consumption of their natural markets, operating their plants with a more informed judgment, and recognizing that they themselves are largely responsible for the profit and loss accounts not only of their own companies but those of the whole group! Certainly no more rational or promising effort has been made in the oil industry. And what economy in the use of red ink!

Who does not remember how recently the concept of the unit development of a producing area was regarded as a mere counsel of perfection? "It is not a new idea or a new ideal," they said. "Every company's great ambition has always been to own a whole oil field and develop it when and as they saw fit." But practically it was impossible. Oil fields had always been developed by competitive drilling at break-neck speed and always would be. "Oil production cannot be made business-like because oil is different. The oil wanders around—it doesn't belong to anybody until he gets it to the surface—then there are the lease requirements, etc., etc." You know the arguments. It simply could not be done.

WHO does not know that if Seminole and Winkler and Pecos had been brought in at one time with the same unrestraint as were the seven major pools of 1923, the industry would have again committed suicide by drowning?

Who does not know that executives who have wanted to keep government out of the oil business at all times and at any cost are now seeking legislation which will empower a state, upon request of a major ownership in an area, to restrain a minority from precipitating one of the good old "inevitable" competitive drilling campaigns?

Who does not believe that, in recognition of both the public and the private interest, oil production has now a good chance to become an intelligent business operation, instead of a race to enrich the few no matter how many others might be impoverished?

I shall stop asking rhetorical questions, for a moment at least, to express a word of appreciation of the program of the committees which will soon be working on a survey of the crude oil production of the major producing states in terms of the consumption requirements to be served by those states. This will involve a study of important producing fields which are the source of our imports and has a logical connection with the restriction of individual pools if discrimination and hardship are to be avoided.

These are some of the efforts in

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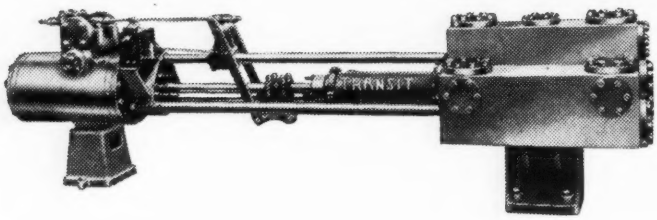

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the larger movement of which the code is a part.

I hope that the industry will adopt, with the government's approval, a code of sound trade practices. A code that is fair to all branches of the industry and that if honorably put into effect will go a long way toward making it possible for the industry to do business with common business sense and at a fair business profit.

An effort of this kind must in the last analysis be tested by its results. We want this code, if adopted, to succeed, not to become a mere gesture. It must not be permitted to become the oil industry's eighteenth Amendment.

WITH this purpose, I have one observation to make. The industry's indefensible marketing practices have been, I think, an effect rather than a cause. The individual units of the industry, governed by ambitious company programs adopted without relation to other similar programs, have produced too much gasoline. The necessity of finding a market for a part of this gasoline somehow, somewhere, and at some price has brought about many of the practices which the code condemns.

If this is true then the greatest single factor in carrying out the code rules will be the exercise of restraint in gasoline production. In fact there is evidence that some restraint of that character exercised in 1928 has made a start in the correction of some marketing abuses.

There is also evidence, however, that new refinery construction, refinery improvements, and refinery additions have been and are proceeding more rapidly than consumption requirements warrant. These expansions are being made, I think, as a result of individual situations and individual company programs, rather than in the light of an analysis of the requirements of the domestic or foreign public. The consequence is likely to be a substantial overproduction of gasoline, and if gasoline is overproduced it will be marketed under much the same pressure that has accounted for the objectionable marketing methods.

It seems obvious that restraint in refinery operations will greatly assist in the constructive steps which the industry is taking in both crude oil production and in marketing its products. The individual refinery must of course be left free to operate as its management pleases, but the more facts that are made available to the management the more intelligent are likely to be the operations. Individual company operations will always be conducted in self interest. But enlightened self interest is more likely to be profitable than uninformed selfishness.

The oil industry, taken as a whole, has shown to a high degree in thought and conduct, its appeciation of the fact that in solving its problems the

public interest is of paramount importance. It has not to the same degree fully realized that it has a public duty to operate at a profit. It has seemed to think that the capital losses of its many unsuccessful or only meagerly successful enterprises, from production all the way to distribution, were merely private misfortunes, a necessary evil inherent in the competitive system of doing business. If that were true these private misfortunes would be deplorable enough, for among other things they must inevitably be reflected in the price which the industry pays for its new capital requirements. But in point of fact the whole public pays in the long run for the oil industry's unprofitable operations.

I do not expect the millennium in the oil industry tomorrow, or the day after. But that the industry has reached a turning point in its history seems evident enough to me. It has been crying for leadership. Let us recognize that leadership is manifesting itself. It takes time for services to be fully appraised. I could name, if I cared to, certain men whose leadership will be appreciated as no executive has been looked to for guidance since Alfred C. Bedford.

The code is but one of several steps forward that are being taken. The significant fact of the whole change of attitude is the growing recognition that the oil industry has either a common welfare, or no welfare at all.

And, Mr. Editor, please give me credit for having written a long letter on this subject without having used, up to the present moment, that overworked but still undervalued word, "cooperation."

"Legislating Against Human Nature"

The following editorial on the A. P. I. code appeared in the Dec. 28 issue of Printer's Ink, a weekly business paper devoted to advertising and sales work. It was carried under the caption that heads this article.

Viewed in one light, the "National Code of Marketing Practices" adopted by the board of directors of the American Petroleum Institute at its annual meeting in Chicago recently, is a rather discouraging document. We plume ourselves so often (and sometimes deservedly) upon our national displays of intelligence and high principles in the conduct of our business affairs, that it is something of a shock to find that a leading and distinctly American industry thought it necessary to take formal action against some of the childish practices mentioned.

But that this should be found discouraging, of course reflects upon the over-optimistic reader and not upon the industry which has had the courage to go on record against some of the things that have long plagued it. And there is much in the code which is of excellent good sense, making toward increased efficiency and economy in the distribution of petroleum products — something which they are not alone in needing badly.

Still, when it is considered that some twelve out of a total of nineteen rules comprising the code, represent elaborate and detailed efforts to define and prohibit all conceivable methods of cutting prices, it does seem that the energy and pains involved in doing this might have been employed to better advantage.

In price-cutting, which undeniably has bedevilled the petroleum industry as much as any, it is the thing itself which causes the trouble, not the incidental trickery through which it is accomplished. So long as there are would-be merchants in any field who know of no better way to sell their goods than by throwing away their own chances of profit, so long will there be price-cutters.

The American Petroleum Institute can, if it wishes, draw up a code containing not 12 but 12,000 rules against as many schemes for cutting prices; and it will discover next day a newly invented twelve thousand and first. Furthermore, those new schemes will do no more harm to the real merchants of the industry—those who know how to advertise and how to sell their products on their merits at a fair price—than any of their abhorred predecessors have done or could ever do.

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Mines airplane field, under lease to the city of Los Angeles, Calif.

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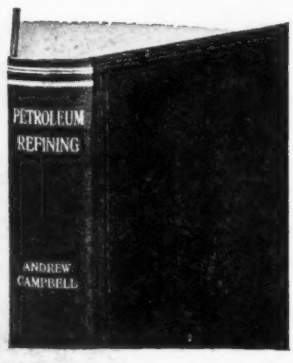

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NATIONAL PETROLEUM NEWS

1213 W. Third St. Cleveland, Ohio

Kenney, McGowan Leave Marland

LOS ANGELES, Jan. 5.—Col. F. R. Kenney, president, and Ellsworth McGowan, secretary, of the Marland Oil Co. of California, resigned their respective positions late last month. Col. Kenney has announced no plans for the future other than taking a vacation, the first one he has had for several years. Mr. McGowan becomes vice-president in charge of operations for the Kettleman Oil Corp., a concern which holds extensive and well located acreage in the new Kettleman Hills field.

R. E. Collom, who served as the second oil and gas supervisor for the state of California, and who has been connected with the Marland Oil Co. of California since its organization, and who during the past two years has been executive vice-president and general manager, continues in that position in complete charge of California operations.

Mr. McGowan had been serving for the last two years as secretary of the Marland Oil Co. of California and his former position has been combined with that of H. G. Thomas who had been acting as treasurer. Other resignations in this organization include, H. B. Duchand as assistant treasurer and T. H. Sterling as assistant secretary. W. W. Bruce, assistant to Dan J. Moran of the parent Marland organization, was elected assistant secretary of the California organization and Baird H. Markham, treasurer of the parent company, becomes assistant treasurer of the California company.

Carl H. Beal, who had been a vice-president of the Marland of California, resigned that position some two months ago. Mr. Beal had become interested in the Kettleman Hills area before the completion of the discovery well and was instrumental in securing for the Marland, considerable acreage that has turned out to be of great value.

The Kettleman Oil Corp., of which Mr. McGowan becomes general manager, is a Delaware corporation and is headed by Harold Talbot. The concern holds about 2000 acres at Kettleman Hills. Others interested in the new corporation include Walter Chrysler, the Payne-Whitney interests of New York and Marion and McKim Hollis of Pebble Beach.

Continental Can Co., Inc., New York, purchased the plants, machinery and business of another can company recently. That was the Wheeling Can Co., subsidiary of the Wheeling Steel Corp., which owns and operates two large modern can manufacturing plants in the Wheeling, W. Va. district.

The Pump Man *Has His Say—*

"Give us some knowledge about the company we work for and the products we have to sell so we can talk with confidence to the public and we'll help increase your business."

This article was written from actual experience. The man who sent it to NATIONAL PETROLEUM NEWS *said it is not a criticism, but a candid appeal for understanding and assistance which he and many other station operators are not given by company executives.*

IN THE mad scramble for gallonage, millions of dollars are being expended yearly in expansion programs, endeavoring to crowd in and to supply more pumps and other equipment than the trade warrants.

Beautiful filling stations are being erected at a high cost—valuable locations are chosen, often at excessive prices and little expense is spared in offering to the public every modern convenience in the line of buildings and equipment.

Yet, is it not true that at some of these best of stations the public is accorded the poorest of service?

The product sold is not at fault—the equipment, appointments and facilities approach the closest known to perfection. Then why should a good station fail to meet the expectations of those who carefully designed and built it?

Apparently the man at the pump is the weak link in the chain. His failure to give service not only tends to drive away some trade completely but considerable gallonage passes on to another station because the man at the pump makes little or no effort to secure all of the business of each customer.

Admitting the man at the pump to be at fault, is he really to blame?

Have you ever given serious thought to the job this man has to cover? What are his responsibilities and duties? How much real assistance is he given in the way of preparation and advice before assuming charge of a station? How is he guided, once this job is his?

In my own case, which is not exceptional, after a few days spent in working with the regular attendant, I was given charge of his station. Fortunately, it was an agreeable arrangement. The man was taking a vacation. Therefore, he held back nothing in the way of advice and assistance. Being "green," I did not, at that time, realize how meager was this help.

At any rate, I received the keys, change fund, a list of credit accounts and the former attendant's well wishes. Quickly and easily I found myself in charge of a place of business with a purchase value exceeding $10,000. It was up to me to run this business satisfactorily, keep everything clean and orderly, order and account for all stock received and serve the trade during certain hours specified by the company.

Keeping the station, grounds and equipment in proper shape gave me little trouble. I was not bothered by reason of the paper work incidental to the business. It was in serving the trade that I met with difficulty more than once. Being alone, each problem was my own to solve.

IT DID not take long to realize that customers individually were no more alike than the cars or trucks they drove. There are many makes and models of motor vehicles, each with various peculiarities concerning which a good station operator should be informed.

I found that the job called for a

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Humble Motor Oils satisfy. They are produced only from high-grade cold-test crudes and are "straight run." They are not mixed or blended. Humble Motor Oils are of a clean, beautiful amber color and have just the right body to properly lubricate all bearing surfaces, and when burned leave little carbon to foul the motor or contaminate the crankcase mixture.

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"Zero Cold-Test Oils"

wide knowledge of things aside from "gas," oil and grease. Motorists not only travel extensively but expect to be advised and aided along the way. What more logical place could be chosen than a "gas" station to seek such guidance and assistance?

Some customers always were in a hurry, others were reluctant to move out of the way. Many drivers liked to talk while a few frigid ones seemingly resented even a smile. From experience with drivers from many states, I found the general riding public hard to understand and harder to please.

TRAFFIC conditions cause annoyance to drivers as well as pedestrians and when one is annoyed he seldom fails to show it.

Take the air tower customer, for example. He is usually a "touchy" man to approach and no little tact is required to persuade him to move his car over to the pump; however, the air tower is a fine place to make new friends for the company.

I met many motorists who questioned me concerning my company, its officials and more especially with regard to the products we carried. Again and again I was unable to give the proper reply and furthermore I did not always know where to seek this information for future use.

Naturally, it was taken for granted that our product was "all right" but I had scant knowledge of why it was all right. I had been told nothing of the interesting processes of refining, the exacting tests and specifications required by our company before the distribution of its product.

I had no idea of the "picture" excepting the scene in which I had but recently accepted a minor role. However, space does not permit of going into myriad facts and detailed information, with which every station man should be equipped and so generally is not.

There yet remains for consideration the question: how is the man at the pump governed after the job is his to carry on? In the answer to this question may be found the reason for the success or failure of many stations.

Remember he is only a little fellow, this man at the pump. His rating is low as vast organizations grade today. Measured alongside of the men "higher up," the man at the pump fades to near insignificance.

The pay he receives, the hours he works and the very task he does keeps him far distant from the attention of the "big men" in the outfit, who are busy with big things.

Thus it is that the man at the pump is often controlled by the man actually but one size bigger, though in effect a veritable giant in his own estimation as evidenced by the front he presents.

It is usually the first promotion which causes the greatest strain upon the hatband.

These "one-size-above" men often are called inspectors. The title itself forbids confidence and invites constraint.

Too many, though not all, inspectors are daily doing more harm than good. By reason of brief visits, unfair criticisms and "high hat" methods of conduct, the type of man at the pump who really cares about his job hesitates to seek advice or aid from his immediate superior. Often the man who governs also is without complete knowledge of what the man at the pump has to do and how he should do it. Others who have this knowledge are weak in their ability to impart it to the men in their charge.

The men higher up do not bother with detail. Their interests are concerned with total figures and net profit or loss. They are constantly looking ahead. Such men are big and are neither "high hat" nor overbearing. They simply do not have time to go down to the foot of the ladder and personally investigate conditions.

A great many men in executive positions do not drive their own cars. Most station men have a way of knowing the "big boss" who does drive and naturally "snap into it" when his car arrives at the station. It is not unusual for some big men to be so engrossed with their own particular problems as to fail to note whether they receive good service or the reverse at their own stations.

OCCASIONALLY, a man at the pump says or does the wrong thing before an executive, or one of his friends, and finds himself removed from the pay roll. There the matter ends. Other men at other pumps, owned by the same company, continue to give poor service.

Were statistics available, it might prove surprising to many oil company executives to note the percentage of retail customers who meet no other representative of the company than the man at the pump. For this reason, if no other, it is most important that this representative always be capable and desirous of creating a favorable impression upon the part of his trade by means of presenting an attractive appearance, courteous manner and competent action.

Few men when applying for a job at the pump possess the above combination of essentials. Many cannot or will not, of their volition, attain these qualifications, but every man at every pump should be accorded all possible assistance to the end that he acquire sufficient proficiency to serve the trade satisfactorily.

In view of the highly competitive

conditions of today, though a station be granted every advantage in the way of location, product and mechanical facilities, only failure is invited when the man at the pump is incompetent.

Price, ever an important factor to oil companies, is not the only consideration of many who patronize filling stations. Regardless of the make of car, the owner's pride in its possession and appearance is a matter not to be overlooked.

The careless attendant who gives slovenly service or causes damage by thoughtlessly slamming a hood up or down earns the contempt of and forfeits the chance for future business from many owners.

DIRTY hands returning oil-soaked and grimy change, alone, have occasioned not a few people to stay out of certain stations.

This problem of personnel is not without a solution.

For one suggestion: Why not create and constantly stimulate within the mind of this man at the pump a genuine interest in his job and his relation to his fellows in this connection? The industry which affords him a living has a story second to none. Is he not entitled to know more of this story than is usually the case?

Would it not tend to change the attitude of the man at the pump by having the realization that his was the privilege of completing a long chain of processes; that it was his part to sell the finished result of the many efforts, of many people, in many places?

Although expense is not of evident importance in securing a location, building and equipping a modern station, expense immediately assumes primary importance when it comes to hiring the man at the pump.

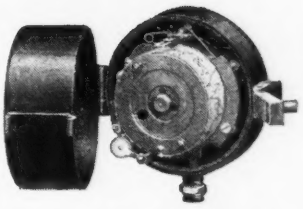
Men can be hired at all prices and like shoes, cheap ones do not appear well, do not "break in" easily, do not fit smoothly or last a great while. As a cheap shoe covers the foot, so may a cheap man cover a station job.

No one, with a sense of values, is long misled. The flashier the man or the shoe at the beginning, the shabbier both appear after a little wear.

It is a mistake to put a cheap man at a good station, or any station, and expect to build up or even retain gallonage. The man at the pump must have a mind and that mind should be at ease, free from financial worry.

If the job does not pay enough to live on, a good man will leave to take the first better job that comes to his attention. The cheap man not infrequently endeavors to get more money by cheating. In either case the company loses and the trade as well.

Most companies could pay a great deal more to the man at the pump



Here's a better way to compute delivery costs!—and a surer way to

PROTECT Your Profits

ONE by one, from city streets and country roads, your trucks come in. Do you *know* how far they were driven? Or how fast? Are you sure there has been no avoidable idle time? You *can't* know, unless every one of your vehicles is equipped with OHMER Recordografs.

Install "Recordografs" on your trucks

Get a graphic picture of what occurred during the day. See for yourself how fast, how far, your trucks were driven. Check up on the stops, the idle time. Protect yourself. Operate on a more economical basis. Know the *facts* about your delivery costs.

These facts mean profits. And there is only one way to get them. Install an OHMER Recordograf on *every* one of your trucks and commercial vehicles!

Mail the coupon for complete information. And be sure to get our systems of keeping commercial vehicle accounts. They are simple and practical. We'll be glad to send them free on request. There's no obligation involved. Send the coupon *today*.

Other Ohmer Products

The Odometer and Hubodometer, two famous Ohmer Mileage Meters. Fare Registers and Cash Registers of every type and for every purpose. Ticket Printing and Non-Printing Taximeters. Four styles of Fare Boxes. Industrial Counters for all purposes.

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REG U S PAT OFF AND OTHER COUNTRIES

FARE REGISTER COMPANY

Dayton, Ohio, U. S. A.

Send us further information about the operation and installation of the OHMER Recordograf.

Name.....

Address.....

Pin this to your letterhead

and find at the end of a year that the labor cost per gallon was actually lowered. Men of high caliber are not only more receptive to proper training but are more appreciative of its value and application to the job at hand. With the incentive of a fair commission arrangement the man at the pump would want to know more and do more, in order to earn more.

Every large company and most small companies employ tankwagon or other salesmen. These men are not without leisure hours for varied reasons. A little of this time might well be used to pass along their knowledge to the man at the pump. Whether the sale is for five gallons of "gas" or five carloads of gasoline, knowledge of the product and how to sell it is essential.

He is only a little fellow, this man at the pump, but do not overlook him, for his is an important job. Nine times out of ten he is just what his company rates him.

He may be considered as a sort of combination janitor and servant or as a branch manager of the business, primarily a salesman. In either case, he remains necessary to the operation of a station.

Why not give him a better chance? Choose him carefully, train him well, govern and pay him accordingly. Such a man will keep the gallonage you have and increase it. The trade is constantly seeking for better service.

As the gallonage per station increases, (differential remaining constant) proportionately the overhead decreases. No one is closer to the gallonage user, no one has a better opportunity to please or offend the retail trade than the man at the pump.

Finally, the trade seldom takes the trouble to express comment favorable or otherwise beyond the usual "contact man," the man at the pump.

Iowa Jobbers to Talk Costs Of Selling Gasoline

DES MOINES, Ia., Jan. 5.—Costs in marketing gasoline will be discussed at the eighth annual convention of the Iowa Independent Oil Men's Association, at the Fort Des Moines hotel, Feb. 19 and 20.

Several subjects dealing with that phase of the marketer's problems are lined up for the program, but the speakers have not yet been announced. One talk will be on "Good Operating," another on "Profits," on "Credits," "Accounting," and so on.

Speakers who will have a worthwhile message for every oil man attending have been promised by M. L. Long, secretary of the association, according to the December edition of "Independent Topics," the association's official bulletin.

Marketing 'Gas' or Selling a Price?

W. P. MacDonald*

Reprinted from the Ohio Petroleum Marketer, December 1928

A PERUSAL of the advertising of most Ohio oil companies would tend to convince even the most casual observers that the principal stock in trade of the average gasoline marketer is price—that nothing else is to be considered; nothing else is of sufficient importance to merit more than passing mention; that price, and price alone, is the sole and all-important factor in making a sale.

And this, too, despite the fact that the gasoline seller's market is at the present time far more certain and assured than that of the marketer of any other commodity. Proof of this is readily found in the fact that thousands of American families today are denying themselves the bare necessities of life and working untold sacrifices for the pleasure of owning and driving an automobile. And we have not yet seen a car that will run without motor fuel!

But even with this assured market for his goods, does the gasoline marketer really market his product? To our way of thinking, no—not by any means—and we believe this is proved by the selling methods of the majority of Ohio jobbers up to the present time.

Ride through the city streets, over the boulevards and highways, and with but few exceptions, you'll find that almost the sole argument used to promote gasoline sales is price. And the same has until very recently been only too true also with regard to commercial gasoline business.

This certainly is an unsound and uneconomical method of doing business and it is indeed hard to understand just "why" and "how" practically the entire industry in the Buckeye state has fashioned its selling policies upon this basis. One can readily understand why a small dealer, ignorant of actual marketing costs and modern methods, would pin his entire faith to price alone, but why an experienced, intelligent jobber puts himself upon the same low level, is incomprehensible.

"Yes, that's all right to talk about," you say, "but how can we meet this competition without competitive prices? If we do not meet our competitor's prices, they'll steal our gallonage away from us."

Answering that question with another question, I might ask: "Have you ever really tried any other method of combating cut prices save with a cut price?"

Have you, or has any other Ohio oil jobber, ever really marketed gasoline instead of merely selling a price? Have any of you ever really sold your customer the fact that there is a vast difference in gasoline; that the better gasoline—because of greater mileage and fewer repair bills—is the cheapest in the long run?

Have you ever sold your customer the fact that, even if they pay 2 cents less per gallon for cheap gasoline, the maximum saving for the average motorist is but $14.53 per year—and that the use of poor gasoline will result in repair bills for valve grinding, carbon removal, replacing valve stems, etc., totaling much more than the above difference.

Have you ever had survey made of the cars that pass your station regularly day in and day out, and have you sold them your service and your gasoline and oils from the standpoint of convenience and quality?

Have you made certain that your station operators are salesmen who make the most of every opportunity to sell your goods—instead of being merely attendants and order takers? Have you ever really thoroughly instructed these men how to sell, or did you merely hire them and let some older attendant instruct them in the art of delivering five gallons of "gas" and a quart of oil?

Have you made it a point to see to it that your advertising really sells your customers on the difference between your gasoline and that of the "gyp"—instead of the meaningless type of "Hot-stuff Gas—more power—more miles" ads that we see everywhere every day?

If you have conscientiously done these things, and others that tend to market your gasoline instead of merely selling a price, then we take off our brown derby (the only one left) to you; for, personally, we do not know of a single oil company that has thoroughly marketed its gasoline to the fullest extent possible.

We believe that, regardless of price conditions, a profitable gasoline business can be built up by any company that really merchandises its products, because the average motorist or large user of gasoline is intelligent enough to know that in gasoline—just as in any other commodity—he'll get a degree of quality and worth commensurate with the price he pays.

No business founded upon price alone can lay claim to having any regular customers—and regular customers produce the only dependable and satisfactory profit.

*A field representative of the Ohio Petroleum Marketers' Association.

Taking Patrons Into The Safety Program

By Ward K. Halbert

N. P. N. STAFF WRITER

CHICAGO, Jan. 7

CAN the expenditures of an oil marketing company in the interest of accident prevention be made to show any immediate return? C. P. Anderson of Richfield Oil Co., Los Angeles, thinks they can. He considers that safety work has a direct merchandising value. Here is how he is making this expenditure pay dividends.

Mr. Anderson has ceased to look upon accident prevention as an internal affair of the Richfield Oil Co. Of course, a good deal of it is entirely internal but the customers likewise are interested in considerable part of it and he has set about to let them know what his company is doing in their behalf.

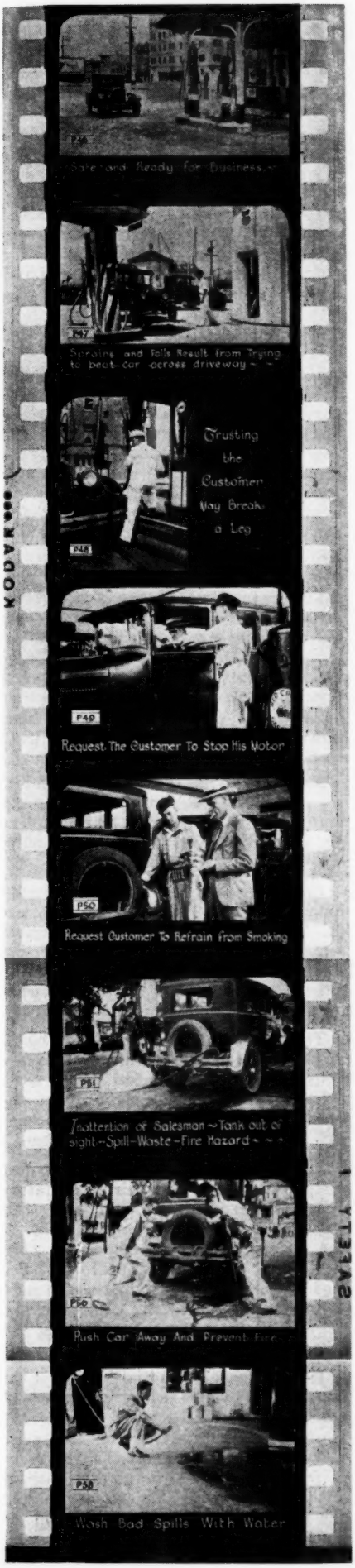
He made a list of all the precautions which concern the trade directly and proceeded to get a little pamphlet made up to be passed out to customers at service stations. In order that other companies might enjoy the same advantage, he passed his idea along to the National Safety Council and the pamphlet was printed in Chicago under the direction of H. N. Blakeslee, petroleum representative of the N. S. C.

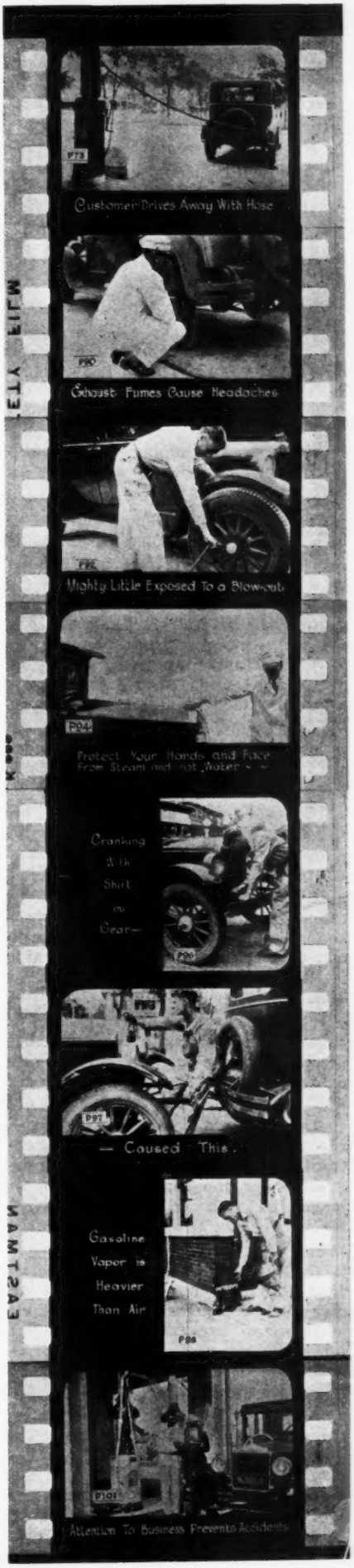
The booklet is composed of six 3 by 6-inch pages, printed on book paper. It contains 20 safety suggestions to motorists and is decorated with eight illustrations. The wording does not suggest that the motorist is responsible in any way for what may happen at a service station when he is there, but simply tells 20 ways a motorist may cooperate with the station salesmen for his own safety and that of his family or whoever is riding with him.

Although the pamphlet does not blatantly say so, it is a nice way of impressing the customer with the fact that the oil company is looking out for his safety. Nearly every motorist knows that carelessness of station salesmen is dangerous.

If they are convinced that the Richfield Oil Co., is training its men to be careful it naturally goes a long way toward building customer confidence.

The printed matter in the circular tells the motorist how to perform at


Sprains and falls Result from Trying to beat car across driveway
Trusting the Customer May Break a Leg
Request The Customer To Stop His Motor
Request Customer To Refrain from Smoking
Inattention of Salesman—Tank out of sight—Spill—Waste—Fire Hazard
Push Car Away And Prevent Fire
Wash Bad Spills With Water


Customer Drives Away With Hose
Exhaust Fumes Cause Headaches
Mighty Little Exposed To a Blow-out
Protect Your Hands and Face From Steam and Hot Water
Cranking With Shift in Gear—
— Caused This.
Gasoline Vapor is Heavier Than Air
Attention To Business Prevents Accidents

Illustrations at left and right from a booklet issued to station customers by the Richfield Oil Co. showing how the motorist can cooperate with the station attendant in safety work

the service station while the pictures illustrate the results of doing the wrong thing. Some of the more common errors of motorists were shown in the cuts; such as driving away hurriedly with the pump hose nozzle still in the tank.

Mr. Blakeslee assumed in writing the pamphlet that all motorists are interested in the safety and welfare of the men who work at the station as well as themselves. So part of the 20 suggestions had to do with helping the customer to avoid hurting one of the men on the drive to serve him. Briefly, it was suggested that:

Motorists should drive into a service station slowly, with the car completely under control, thus avoiding the disaster of running down one of the station attendants or some fellow customer who might have alighted from his car in the station.

MOTORISTS should allow the service station men to do the work incidental to serving his car, and not get out and try to help, even if he is in a hurry. In the first place, the customer's help is likely to defeat his own intention and slow up the service rather than speed it up, and too many hands at the job tend to cause confusion and increase the factor of danger.

Motors should be stopped while the car is being served. The booklet gives several reasons for this:

If gasoline is being pumped into the tank while the motor is running, a spark from the exhaust may start a fire.

If motor oil is being put in the crankcase while the engine is running the salesman's hand is likely to be cut on a fan blade or the vibration is likely to cause the hood to fall on him.

If the motor is running while the salesman is putting air in the tires, he can breathe enough carbon monoxide in the exhaust fumes to give him a headache that will last all day.

And if the motor is running while the salesman is putting water in the radiator, the chances are much greater for the car to start up and mash the man or make him strain his back in an effort to make a quick get-away.

The circular suggests to motorists that they put out their cigars and cigarets before they enter a service station and urges them not to light up until they are well away from the zone where petroleum vapors are likely to accumulate.

Probably the most enlightening thing in the booklet is the part that tells the motorist what to do in case of fire at a service station. In substance the suggestion is to leave everything just like it is when the first flash comes, get away to a place of safety and let the men at the station handle the situation, because they know how.

Wherever a fire breaks out (at an oil station or elsewhere) provided there is no police restraint at hand, it seems to be human instinct for everybody in the neighborhood to offer himself as a voluntary fireman. People have a way of rushing in and starting to move everything, and possibly throwing water around indiscriminately. In an oil station fire there is no worse thing that could happen.

If the fire is under the hood of the automobile, the hood should be left down and the fire fought through the vents in the hood. If the fire is where the hose makes contact with the automobile tank, it should not be removed. Jerking it out serves only to scatter gasoline and spread fire. Mr. Anderson's men are instructed in these things and his customers are urged to let them handle such situations.

On the other hand, there are two things that customers are asked to do—things the oil salesmen are not supposed to concern themselves about at all. One of them is the dog in the car and the other is the hand that may be in the way of the car door. Those things are cares of the motorist, exclusively.

Certainly the station salesman can be careful to keep his own fingers out of the car doors, but two hands are as many as he can be expected to watch, because he is supposed to be busy with other matters. Children's fingers often get mashed in automobile doors at service stations. This is due partly to the child's interest in what is taking place outside and to the parent's preoccupation, especially if the hour is busy and the station full of cars.

BESIDES looking out for their children (if any) the circular urges that customers look out for their dogs. Not that dogs get hurt—they usually take care of themselves. But dogs often bite station salesmen. This does not happen exclusively when salesmen attempt to pet the dog; it happens sometimes in the regular process of making change.

In making up this piece of selling publicity, Mr. Blakeslee used material which came from the National Safety Council petroleum circular No. 2, issued about a year ago. It was the first comprehensive piece of literature on service station safety work ever issued by the council. In the past the council's safety activities had been in the other two branches of the oil business.

It started in the refineries and spread first to the field of production.

In developing that first work on safety at service stations, Mr. Blakeslee traveled all over the country. He interviewed oil marketers, safety directors and service station salesmen on the Pacific coast, throughout the middle west and along the Atlantic seaboard, taking notes and making pictures as he went.

With all the tabulated information on causes and remedies for accidents at service stations, gleaned from scores of companies which had specialists on the job, Mr. Blakeslee worked up petroleum circular No. 2 which is now famous. His second step was to reduce the subject matter of the bulletin to an illustrated lecture for screen work.

AFTER writing the scenario and selecting illustrative pictures from his own camera work he turned the material over to the Society of Visual Education, Inc., Chicago, and they produced a moving picture film for projector work at a cost of $50. Now the negatives are available to N. S. C. members free for one week or may be bought outright for $5.22.

Mr. Blakeslee can not correctly be called a member of the staff of the American Petroleum Institute, but his activities are financed by that organization. He is stationed in Chicago in the offices of the National Safety Council, better to use their specialized library and equipment, and he functions as a member of the N. S. C. staff.

Membership in the N. S. C. and in the A. P. I. are common to a great many oil companies. However, an oil company may belong to one without belonging to the other.

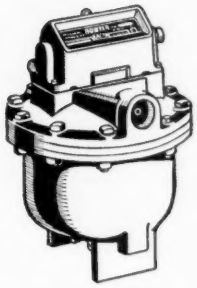
Executives of oil companies use Mr. Blakeslee's literature as they see fit. Some of them gave his original set of safety rules to the service station salesmen. Others passed them out in broken doses or in somewhat of a pre-digested form.

The films have been used by a number of companies who designate a man to hold group meetings of service station salesmen, show them the pictures on the screen and preach safety to them at the same time.

A few of the pictures from the film strip, together with their explanatory subtitles, are reproduced with this story, but they are only a hint at the safety lessons in the film. Mr. Anderson of the Richfield Oil Co., Los Angeles, was first to see the merchandising value in the campaign and suggest letting the customers in for some safety education.

He made his suggestion first to R. E. Donovan, safety engineer of Standard Oil Co. of California, western representative on the engineering committee of the National Safety Council. Through his position with the council, Mr. Donovan put the wheels of the organization in motion and Richfield Oil Co., was first to capitalize on it.

Four ways to make more profits in 1929



"Xacto" Meter

"Xacto" Meter checks purchases, receipts, and deliveries to the fraction of a gallon, and with "Xacto" Sentry, gives you a positive record that you can check your cash register against daily. Thus, your operations are guarded all the way from tank car to customer's car tank.

There are at least four ways that you can make more profits in 1929:

First: keep a better check on your operations from tank car to customer's car tank, and thereby eliminate losses.

Second: increase your gasoline business.

Third: increase your oil business.

Fourth: make your night trade more profitable.

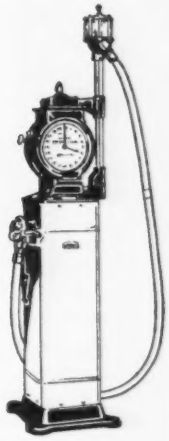
Just how Bowser equipment can help you do these things is set forth in the little paragraphs alongside the illustrations. Use the convenient coupon.

S. F. BOWSER & COMPANY, Inc.

Complete Filling Station Equipment

1302 Creighton Avenue

FORT WAYNE INDIANA



"Xacto" Sentry

"Xacto" Sentry, the modern high-speed, continuous-flow dispenser, helps you fill up your customer's gas tank more quickly. With "Xacto" Sentry you can average one to two gallons of gasoline *more* on each sale. Users tell us that this is not hard.

The Oil Fountain

The Oil Fountain not only saves time and steps, but sells more oil. Hundreds of users told us last year that, on the average, the Oil Fountain increased their oil sales 37%.

Bowser Floodlight invariably attracts more night trade. You do not build stations to be beautiful only in the daytime. Lengthen your working day and increase your night profits by floodlighting your station.

The New Bowser Floodlight

BOWSER ESTABLISHED 1885

S. F. BOWSER & COMPANY, Inc.
1302 Creighton Avenue, Fort Wayne, Indiana

I would like more information on your sales-building equipment.

I am particularly interested in.....

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Address.....

The Lube Oil Tank Selling Racket Is Dull as Dividends Drop Off

By Ward K. Halbert
N. P. N. STAFF WRITER

PROMOTION oil marketing companies that finance themselves by selling lubricating oil tanks and pumps (worth about $17.50) to hopeful investors for $200 to $250, together with an agreement to give the investor 5 or 10 cents a gallon on all the oil sold through his pump for five years, are experiencing "rough sailing" in Chicago currently. Their experiences are interesting.

The idea is about two years old. It started first in Detroit when the Detroit Motor Oil Co., financed itself by the so-called "unit selling plan." A unit was a 60-gallon, rectangular lubricating oil tank complete with pump and profit sharing contract to the investor. Little is known of the Detroit venture except that it once paid its investors as much as $7.82 a month and has not paid them anything at all recently.

The first account of a proposition of this kind appeared on page 61 of NATIONAL PETROLEUM NEWS, issue of Feb. 15, 1928. That article discussed specifically the operating and promoting plan of the Roberts-Reitze Oil Corp., 180 North Michigan avenue, Chicago, now known as the Safety Seal Oil Co., at that same address. Under the new management, Safety Seal Oil Co., has quit selling tanks to investors and has started into the motor oil jobbing business along somewhat conventional lines. According to the treasurer of the company, it "got out of the red" in November for the first time.

There are two other companies in Chicago doing business in much the same way Roberts-Reitze did formerly. They are Excelsior Oil Corp., 205 West Wacker drive, and Chicago Motor Oil Co., 310 South Michigan avenue. Details of promoting the three companies are not the same, but they function so much alike that to know one plan is to know all three.

To avoid complications in details, it is easiest first to review the history of Roberts-Reitze Oil Corp., incorporated June 11, 1927 and starting up in Chicago the next month. First they got a jobber's membership in the Pennsylvania Grade Crude Oil association and arranged with a local compounder to make up a 100 per cent Pennsylvania oil to their order. Then they arranged to purchase some rectangular lube oil tanks and pumps. The next job was to get money to operate on. And here is how they did it:

SEVERAL middle western towns witnessed, the last year, a new promotion type of oil marketing company.

These companies have been financed by selling to the general public $17.50 lube oil tank and pump units for $200 each, with a promise to pay each investor in such an outfit a certain amount per gallon from all the oil sold through the tank.

More than one company of this type for a time paid as much as $4 a month to its investors in tanks. In other words the company was paying $48 a year for the use of $200, an interest rate of 24 per cent.

Naturally investors were delighted as long as this rate of payment continued. One of these companies is now paying 50 cents a month on each tank, which is said to represent actual sales of oil through the unit. At this rate the investor is getting a return of 3 per cent on his money.

They sold the tanks to whomever they could get to buy them, except oil dealers. Each tank was sold for $200 and no investor was allowed to buy more than five tanks. As soon as a tank was sold it was placed in a private filling station or garage somewhere in Chicago. The tank full of oil represented an actual investment of not more than $50. The agreement with the investor was that he should receive 10 cents a gallon for all the oil dispensed from the tank for five years, after which time he might renew his contract.

If John Doe, streetcar conductor, bought one of the tanks and wanted to see it, a company representative would take him out and show it to him. Of course John was given to understand that some tanks sold more oil than others but that would not affect his income—all investors' checks were alike each month. If John owned one of 50 tanks in service, the face of his monthly check would be the number of gallons sold from all the tanks, times 10 cents divided by 50.

Each investor's monthly check was $2.10 for July, 1927, and the amount increased gradually until all drew $4.60 in December. That left the impression that the average tank sold 46 gallons in December 1927. A "post mortem" examination of the company's records has shown that the tanks did not earn any such a figure. If the tank owners had been getting just what their tanks earned (checks equalized over all) they would have received less than $1 a month, according to persons now in charge of the company's affairs.

These dividend checks, or "profit checks" as the salesmen called them, were purposely made large early in the company's history. Photographs of the checks were used by the salesmen to induce others to buy tanks and pumps at $200 apiece. If anybody wished to confirm what he saw in the photograph he could do so by telephoning the man whose name appeared on the check as payee.

Naturally the thing went over big with a certain class of investors in the early stages. The comparatively small investment and the fictitious profits more than satisfied those who got in early. But it is another story now. Women who put their savings account into a lub tank a year ago and were overjoyed by early returns now can't understand why their oil tank sold only ten gallons of oil last month and they get only $1. There seems no way to explain to them.

These women do not hide their feelings. Frequently they come in person to the offices of the Safety Seal Oil Co. at 180 North Michigan avenue and weep all over the president's big mahogany desk.

Another blow to this type of promotion has come within the last two months. When the major oil companies in this territory revised their quantity discount agreements so that dealers who formerly earned 5 cents a gallon on gasoline now get only 3 cents, it was discouraging. A great many filling stations ceased to make a profit. Many of them sold out. Some of them closed up. And in it all the promoters lost locations for their tanks.

Of course in the old days, pros-

SUPER-RATIO

Anti-Knock High Compression

MOTOR FUEL

TODAY persons demand infinitely more in an automobile than they did a few years ago. They insist on more trustworthy performance. They demand snap, acceleration, power, speed, longer life and a greater resale value.

They also demand more in a gasoline. They demand a carbonless, knockless, powerful fuel which will make the engine perform in the manner its maker intended it to.

Such a gasoline is Derby's SUPER-RATIO MOTOR FUEL.

It is as much superior to ordinary gasoline in an engine as smokeless powder is superior to black powder in a gun.

Like smokeless powder it explodes with a powerful push, not a quick knock.

SUPER-RATIO adds from 10 to 15 per cent more power to engines with a low compression ratio and from 25 to 35 per cent more power to engines with a high compression ratio.

It has a Benzol Equivalent in excess of 50 per cent.

While the Derby refinery is smaller than some in size, it is second to none in modernness of equipment and inspection standards.

SUPER-RATIO Motor Fuel is particularly efficient in Fords, both Model T and the new Ford. Derby is the first refinery to offer dealers a gasoline peculiarly adapted for use in Ford cars.

Write us for full details regarding SUPER-RATIO

DERBY HIGH GRADE PETROLEUM PRODUCTS

Stock Them and Be Quality-Sure

64-66 375 Hi-Test
60-62 400 Straight Cracked
58-60 Straight Run U. S. M.

41-43 W.W.D.T. Incubator Kerosene Fuel Oil.

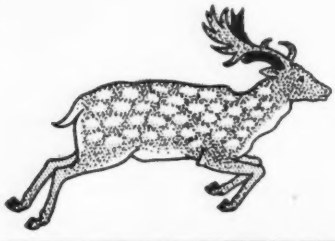
WRITE Wichita, Kansas, L. D. 177
WIRE
PHONE Kansas City, Mo., L. D. 94

The Derby Oil & Refining Corporation

PRODUCERS, REFINERS, MARKETERS

WICHITA, KANSAS

Fleet



LORECO
Master
MOTOR
FUEL

THAT indescribable lightness of velocity that makes for a sweet running motor is found in this new motor fuel. A gasoline with extremely high anti-knock value and low initial boiling point, insuring quick starting in all kinds of weather and 100% non-detonating performance under every operating condition.

Expertly refined to meet the most exacting demands of your premium trade. Ask for quotations.

LOUISIANA OIL REFINING CORPORATION
Producers — Refiners — Marketers
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GASOLINE LORECO MOTOR OIL

GRANBERG PETROLEUM METERS
give precise measurements of
Petroleum Products

Installed on Loading Racks they eliminate the probability of human error in gauging and recording, and furnish accurate volumetric records of plant disbursements.

Send for our literature.

GRANBERG METER CORPORATION
"Precision Meters for Petroleum Oils."
79 New Montgomery St. **San Francisco, Calif.**

perous operators of private filling stations were usually glad to let the promoter set his tank in the station. It cost the dealer nothing and he earned his usual spread on what motor oil he sold from it. Moreover he was sure of having one new customer if the owner of a tank lived in his neighborhood and happened to own a car.

Of course the promoters made it appear that the tank owners would themselves patronize the tanks of the company in which they were interested, and would bring all their friends and relatives to do the same thing. But for some reason it did not work out that way. At least it was not reflected in the sales sheets.

The original management of Roberts-Reitze is all gone now. L. E. Roberts is dead. He was the company's first president. It is now in the hands of T. L. Walsh, president, and H. Eisensehimel, secretary and treasurer. Mr. Walsh formerly was in the novelty business and Mr. Eisensehimel was a real estate man. Both invested in the company early. They have the confidence of the preferred stockholders and have since "sold" most of the tank holders upon their business ability.

THE company did not go through the bankrupt court. The new management is carrying through on the contracts made in the early days of organization, but they are not selling any more tanks. Moreover they are not confining themselves to 100 per cent Pennsylvania oil to be sold through sealed tanks to the retail trade. They profess to have increased the company's volume tenfold, going into a straight jobbing business and adding a Mid-Continent lubricant to the line which retails for 25 cents a quart.

The sealed tank proposition was a part of the advertising plan of the original organizers. The plan of servicing the scattered tanks was to have a bonded truck driver bring the motor oil from the compounder's plant in milk cans and dump it into the tanks at the retail points, and then seal each tank with a car seal.

The idea was to throw the responsibility for the genuineness of the oil on the jobber, relieving the dealer of any chance for suspicion of "substitution," about which the public has been told so much by the National Fair (?) Trade association. Each seal had a number and a record of every seal on every tank was meticulously maintained in the headquarters' office.

The Safety Seal Oil Co. still keeps seals on its tanks which dispense "Safety Seal" oil, the 100 per cent Pennsylvania product. In the old days (less than a year ago) the company bought a full page of Chicago Tribune space to use in trying to scare the public into buying from

sealed tanks only, but that happened only once. Now it is content to distribute hand bills or direct mail matter in the neighborhoods where their tanks are placed, quoting the disputable data of the National Fair (?) Trade association to stimulate trade.

Instead of being offended by the sealed tank idea, the Chicago dealers were pleased with it. The same idea is now in use by two of the oldest and best known oil jobbers in town. The Seymour-Howard Corp. sells its Air-Way motor oil in sealed tanks, and the Lynch-Clarisey Co. uses padlocks on its dispensing tanks for Nu-Pro, a 30-cent per quart Gulf Coast oil. Briefly reviewing the Roberts-Reitze Oil Corp.'s achievements, it is now known that the promoters sold 729 tanks to 314 people. But since the new management took the proposition over they killed out the five-year contract provision. Now the tank owners have a 25-year contract and will not have to buy the tanks again at the end of five years. The same $17.50 tanks they paid $200 for in 1927 were to have been sold them again at $125 each in 1932.

THE company's gallonage has increased from 3000 to 30,000 gallons a month, according to Mr. Eisensehimel. And this week the headquarters office moved out of its palatial suite overlooking Lake Michigan where the rent was $510 a month, and took quarters in a $75 office on a lower floor. "Now we are in a position to save something," said Mr. Eisensehimel.

Excelsior Oil Corp., like the Safety Seal Oil Co., has quit selling "units." But Milo J. Frye, in charge of the company's office in the Engineering building, says it is because they have sold as many as they meant to sell. According to Mr. Frye the company has 405 lube tanks in approximately 200 locations and owned by about 50 investors.

This company also has a jobber's membership in the Pennsylvania Grade Crude Oil association. Its oil is protected with padlocks on all tanks. The bonded truck driver who brings the oil from the compounder's plant carries a master key and he alone dumps oil into the vending equipment from milk cans.

Representatives of the Excelsior Oil Corp., once exhibited "profit checks" payable to tank owners as high as $4 a month per tank, but according to Mr. Frye they are averaging between 40 and 50 cents a month now. Little can be learned about Excelsior's personnel and antecedents except that Mr. Frye once owned some units in the Detroit Motor Oil Co.

Mr. Frye told a representative of NATIONAL PETROLEUM NEWS that his company's affairs were largely in the hands of attorneys.

The third company is larger than either of the other two. The Chicago Motor Oil Co. was incorporated for $25,000 in April 1927. It is headed by C. L. Mueller, formerly a public accountant of Milwaukee, who has been successful in keeping his company on good terms with the bank and unit buyers so far. The company has nearly 1000 tanks in service in Chicago and Mr. Mueller says he is going on until he has 3000 in use.

Chicago Motor Oil Co. is also a member of the Pennsylvania Grade Crude Oil association. Its office is in the Straus building, considered Chicago's best. Its Pennsylvania oils in its investor's tanks are protected by padlock, like those of the Excelsior. But the lock is red and is the trade mark of the merchandise, called "Red Lock Motor Oil."

Mr. Mueller denies he ever paid an investor more than was actually earned by the oil tanks in service and equalized to the number of tanks owned. But he says he has paid investors as much as $5 a tank, per month.

One other Chicago company seriously contemplated the matter of selling "units" but finally decided to pursue another course. It was the Air-Way Motor Oil Co., a subsidiary of the Seymour-Howard Corp., a Chicago compounder of age and recognition. It is officered by I. W. Edwards, president; H. S. Morris, vice president and R. R. Rosenbaum, secretary and treasurer.

The Seymour-Howard Corp., is a compounder of special lubricants, especially castor and petroleum blends, and sells direct to big consumers of two hemispheres but has never gone after the automotive trade even in its home town. The subsidiary was organized for that specific purpose and sells Chicago filling stations and garages as well as big consumers in town.

"We did consider the 'unit' selling plan at one time," Mr. Rosenbaum said recently, "and here is why we did not begin it:

"Aside from all the ethical questions involved, the whole 'unit' selling proposition means that the oil jobber borrows $200 from a prospective customer and secures the loan with a promise of part of the profits he hopes to earn from the sales he may make through a given oil tank. If we paid our unit holders $4 a month, as others have done, that would be $48 a year for the use of $200 or exactly 24 per cent interest. Having the backing of a firm with established credit, we can borrow money cheaper than that from a bank."

New Publication

ABOUT a year ago a book entitled "Your Money's Worth" was brought out, in which the authors attempted to set up that the purchasing by the public of all commodities by definite specifications, or standards, rather than on brand name or performance record, was the road to happiness and progress of the human race.

That book aroused much discussion in advertising and sales directing circles. It is doubtful if the book ever got very far below the surface as far as the buying public itself was concerned. Fortunately, the public does miss entirely a good many of the recipes and panaceas that are brought forth to guide its steps towards that ultimate goal of greater comfort and happiness.

For this reason, one cannot help but wonder if the answer to "Your Money's Worth" which has recently been published, "Dollars and Sense" was really worth the effort the author Charles E. Carpenter put upon it. Mr. Carpenter is not unknown to the oil industry. He is the active head of Houghton & Co., Philadelphia, manufacturer and distributor of specialty petroleum products among other things. He is known as a writer on business subjects through his contributions in The Houghton Line, the house publication of that company.

Mr. Carpenter's book takes up a subject in which the oil industry has some knowledge and direct concern. This is the specifications on which the government buys virtually all its supplies including petroleum products. Mr. Carpenter shows how far some of these government specifications are from a guide to the true quality in some commodities with the manufacture of which he is directly familiar.

The oil industry has an example of this before its own eyes. The government in what gasoline it buys in tank cars, no small amount, now secures an inferior product to that sold the general public. But every tank car sold the government comes up to the government's specifications and some of its better. The trouble is the specifications are now obsolete in defining what is good motor fuel today. The refining industry has progressed considerably in manufacturing a motor fuel since those specifications were drawn, in its starting qualities, in anti-knock value and so on.

But the government has not seen fit to change its specifications.

Mr. Carpenter consumes some 250 pages in defending modern advertising and sales effort. He does a good job, but it seems as though it was a waste of good ammunition. The book is by Doubleday, Doran & Co., Garden City, New York.

Indiana Standard Replaces Stanolind With More Powerful Airplane

By Ward K. Halbert
N. P. N. STAFF WRITER

CHICAGO, Jan. 3

STANDARD Oil Co. of Indiana has retired the Stanolind. The famous airship is in a hangar at Municipal field, Chicago being tuned up, preparatory to being sold. To take its place the Standard has ordered a larger and more powerful plane to be delivered some time in the spring.

Standard Oil Co. has owned the Stanolind approximately 19 months, 18 of which it was in use. It was delivered to the company on May 21, 1927, the day Charles Lindbergh concluded his Trans-Atlantic, solo flight. Since then it has flown a total of 80,131 miles without a forced landing due to mechanical troubles.

Between the time of delivery and the time of retirement to its hangar in Municipal field, the Stanolind was in active service 550 days. During that time it spent approximately 952 hours in flight or the equivalent of forty 24-hour days. In short, slightly more than 7.25 per cent of the Stanolind's 18 months of active service was spent in the air.

The Stanolind is a 10-passenger, all metal, Ford monoplane and carries three motors aggregating 600 horsepower. The new plane will be built for 12 passengers. It will be an all metal, tri-motored, Ford, monoplane also, but bigger. The three motors on the new plane will aggregate 1275 horsepower and it will have a wing spread of 78 feet as against 71 for the Stanolind.

Standard Oil directors have used the plane continually since the company bought it. Of course, it has flown many miles without a director in it but the total number of miles flown by the directors exceeds the total number flown by the plane. The total of individual miles flown by 10 directors is 87,436 miles as against 80,131 for the Stanolind.

Several directors often have traveled in the Stanolind at once. It is not unusual for half the directorate to be in the plane together and 80 per cent of them have used the Stanolind at once on a few occasions. A story in a recent issue of the company's house organ carried the following statement:

"The directors of this company recently completed a trip of 2900 miles in 33 hours' flying time, spread over four and a half days, on an inspection tour of the Texas oil fields. To cover the same distance by train and automobile would have taken 10 days, without enabling the directors to see as much or to obtain a picture as comprehensive as that afforded them from the air."

Some other trips of the same character were mentioned. Among them was a flight from Casper to Chicago in slightly less than 10 hours; from Chicago to Denver in 11 hours and 35 minutes, and from Chicago to Detroit in 2 hours and 5 minutes. All of these trips were made by one or more directors at a time.

The Stanolind has carried a total of 6155 passengers. Of this number, 954 have traveled in the big ship on long cross country flights and 1107 have been out for short sight seeing trips over Chicago and vicinity. The 4094 others have used the plane out in the field at points where it has been taken in the interest of aviation, to participate in the opening of air fields, and the like.

The Stanolind has been used for two main purposes. Besides serving as rapid and convenient transportation for company executives on official business, it has been used to spread good news about aviation; to impress the public that flying is safe and a pleasurable mode of travel.

IT HAS made literally hundreds of such trips, visiting towns where an effort was being made by leaders in the community to build an air port. On these trips, park boards, city officials, financiers and others have been taken up in the air to enable them to get a view of the prospective area and determine what best should be done to make the landing field convenient and adequate.

In order to visit towns where landing fields were inadequate, either on company business or to boost the business of aviation generally, Standard Oil Co. has bought and used a small Laird biplane, built for two passengers. It has been used about half as much as the Stanolind.

Shortly after the Standard Oil Co. bought the Stanolind, NATIONAL PETROLEUM NEWS computed its probable cost to maintain and operate, taking depreciation, pilot hire, hangar expense, fuel and lubrication into consideration and reduced the figure to an estimated $66.57 a day.

At that time it was considered safe to say the lowest paid of the directors drew $30,000 a year. There is no late information on that subject that is authentic but certainly it is conservative to estimate the average director's time worth $100 a day to the company.

Thus, referring to the statement in the company's official publication again, the economy of the airplane is obvious. The Stanolind took the board of directors on a trip through Texas in four and one-half days that would have consumed 10 days by ordinary means of travel. The saving was five and one-half days or $550 for every passenger on board. There were probably eight on the trip which fact enabled the air ship to earn $4400 on that one journey.

IN THAT earlier article in NATIONAL PETROLEUM NEWS, it was estimated that the plane would pay for itself and earn a fair return on the investment if it were able to save two-thirds of two directors' time. Actual performance can not be calculated on that basis because the directors have not used it that much.

Nevertheless, the purchase of the new plane proves that the management considers the investment a good one.

The fact that a majority of the directors, controlling the destinies of an institution like the Standard Oil Co. of Indiana, often commit themselves to the air in the same plane is proof that the corporation has faith in its safety. At the same time, every safety precaution is taken.

There are two pilots on duty all the time. Either of them can operate the machinery of the big ship from his own seat or they can take flying a little easy on long journeys and divide the work between them. A third man is always on duty at the hangar.

The Stanolind has four motors. Probably there will be four motors for the new plane also. While only three can be used at once, the fourth is kept in the hangar in perfect operating condition, not for emergencies but to prevent emergencies from arising.

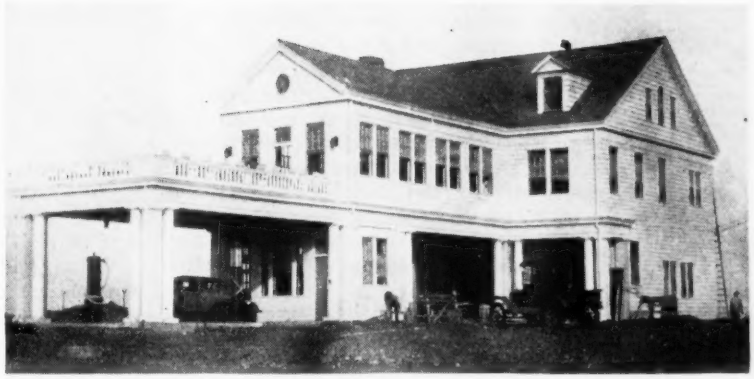
The work of the three motors on the plane is staggered in such a way as to insure their best performance. As soon as one of the motors has run 220 to 225 hours it is removed and overhauled. The fourth motor takes its place on the Stanolind.

Three More Tourist Terminal Stations To Be Built by Pierce Petroleum

By J. C. Chatfield
N. P. N. STAFF WRITER

ST. LOUIS, Jan. 5

AFTER less than six months of successful operation of two automobile tourist terminals in Missouri, the Pierce Petroleum Corp. has completed plans for the erection of three more plants in the southwest. Sites have been purchased and architects' plans are nearing completion.



One of the first tourist terminals built by the Pierce Petroleum Corp., at Rolla, Mo. The new stations are to be of about the same type and will be able to fill complete needs of the tourist, even to a hospital operating table

Conceiving the idea that there is a commercial opportunity in serving wider needs of the motor car tourist, E. D. Levy, Pierce president, and for many years vice president of the Frisco railroad, determined last spring to develop the opportunity in two experimental plants. He took as his model the great terminals at important railroad centers where the needs of travelers are met in every respect.

The first terminal, opened at Springfield, Mo., was designed to serve the needs of the large number of bus lines operating out of that point as well as those of passing tourists and automobile owners living in Springfield. A Harvey House style restaurant, comfortable waiting room with telephone and telegraph facilities and light, clean toilets were provided in conjunction with the service station.

A grease house and high speed auto laundry were available so that a tourist might have his car completely serviced while stopping to wash, eat and rest. Transcontinental bus lines made the station a meal stop, filled with gas and oil and had the buses vacuum cleaned. This station was described completely in the Aug. 1, 1928 issue of NATIONAL PETROLEUM NEWS.

A week or so later the second terminal was opened near Rolla about half way between St. Louis and Springfield. This station was of a somewhat different character but designed primarily to meet the needs of the tourist driving his own car. The service station was placed in front of a large three-story Colonial building which contained a soda fountain and rest rooms on the ground floor and a beautiful restaurant on the second floor.

At the Rolla station an average of 400 noon meals were served to motorists during the Labor Day week end. As late as November the restaurant was serving as high as 185 meals at noon. The station is a popular turning point for St. Louis and Springfield motorists on a holiday, being something over 100 miles from each place. In addition it catches a large number of through tourists on U. S. Highway 66.

Due to its location out of any town or city, the fine view across the Ozarks from its restaurant and soda fountain windows the Rolla station has proved to be more successful than the one located near the heart of Springfield. As a result new terminals to be built by the company will be located at some distance from towns on the main transcontinental routes in the Pierce marketing territory.

The experimental stations having proved satisfactory the company is planning larger and more elaborate plants for its new locations. The Rolla station cost about $70,000 ready for operation. The three stations to be started soon will cost about $100,000 each.

One of the new stations is to be built about five miles east of the city limits of Tulsa on Highway 66 and just a short distance from north and south Highway 75. A commanding high location has been chosen overlooking the entire country east of the city. A second station is to be built a half mile east of Miami, Okla., about half way between Springfield and Tulsa. Completion of these two stations will give the Pierce a tourist terminal every 125 miles between St. Louis and Tulsa. A motorist driving between the two places will be able to take all his meals at Pierce terminals while enroute.

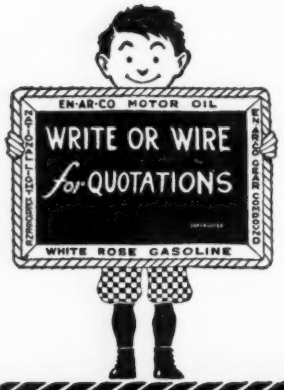
The third new station planned for early 1929 construction will be built on a 25 acre tract just across U. S. Highway 40 from the Columbia, Mo., landing field for mail planes and other aircraft. This station will be half way between St. Louis and Kansas City, being designed to break the motor trip between the two points by offering meals, automobile service and rest facilities.

For all new stations at least 10-acre tracts are being bought at the outset. The company bought a smaller tract at Rolla before building that site and when more ground was needed had to pay through the nose for the land. The site will be large enough to provide parking room for 200 cars, all necessary buildings and some surplus for expansion or sale as values enhance through the company improvements.

NEW stations are to be whitewashed brick colonial structures built to resemble a large country home. A central building 50 by 50 feet will be flanked by two wings, each 30 by 40 feet. On the ground floor in the main building will be a soda fountain. In one wing will be the men's rest room, with the women's room on the opposite side.

The women's wing is to be divided into three rooms. One will contain five toilets and four lavatories. The second room will be equipped with easy chairs and other appropriate furniture for the women's comfort. The third room will be an emergency hospital containing three hospital type reclining beds which may be separated by screens and three infant beds. An operating table and a cabinet of instruments will be provided for emergency cases. The room is to be in charge of a nurse.

Operation of the Rolla station has shown the desirability of the hospital room. One man with a fractured skull and another with a broken back have been brought in at Rolla in the few months the station has been open,



En-ar-co
MOTOR OIL
White Rose
GASOLINE

YOU will make money if you handle these nationally advertised brands.

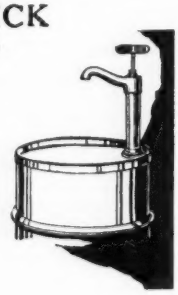
All grades of lubricating oils and greases.

The National Refining Co.
Cleveland, Ohio

This New Pump Boosts Bulk Sales

Turn your "drive in" buyers into bulk customers. You can do it easily, just like dozens of other companies, with this

KWART KWICK
Home Oil Pump



Your occasional customers will become "regulars," buying in 50 gallons instead of 5. Pump handles oil, gas, etc. with equal ease. Fits any drum or barrel for the individual user. Fool proof and wear proof—made of finest brass, steel and cast iron.

Distribute these pumps with bulk sales and increase your gallonage as many others are doing. Write for circular and special quantity prices.

Kwart Kwick Dep't.
VIKING PUMP CO.
Cedar Falls, Iowa

Mail This

Viking Pump Co., Dept. B.

Please send details about your Kwart Kwick Pump.

Name.....

Town.....

State.....

and a number of women have been brought in in a state of nervous shock.

The toilet and rest facilities at the proposed stations will be furnished free. No coin locks are to be put on the doors. "The gasoline and oil business cannot give away such free service to its patrons," Mr. Levy said. "But the restaurant and soda fountain can afford to pay for these conveniences for tourists and will do so."

Mr. Levy has learned from experiences of his own in touring that one comfort station every 125 miles will not be enough for the average motorist. For that reason he is planning to erect a service station equipped with superior rest room facilities half way between each of the tourist terminals. When these are complete tourists to the Southwest will find rest rooms as clean as in any first class hotel about every 63 miles with first class restaurants in connection every 125 miles.

An indication of the appreciation of the motorist at finding such facilities available is seen in the fact that the Rolla station has been selling as much gasoline through its pumps as the average good bulk station.

Eleven Tests Drilling In Nebraska

OMAHA, Dec. 3.—There is a law in Nebraska awarding $15,000 to the man or the company that completes the first oil well in the state. However, there is no money available to make such an award should some wildcatter's dream come true in Nebraska.

The matter has recently caused some concern to George O. Condon, state geologist. He says there are 11 wildcat tests drilling in Nebraska and he has advised the state legislature to appropriate $15,000 to meet the obligation if one of them should come in a well.

Oil Company Radio Programs

For Week Starting Jan. 13

NATIONAL PETROLEUM NEWS *offers you in these two columns the time and stations through which many oil companies over the country offer their radio entertainment programs. If other oil companies will furnish the announcements of their programs in advance they will be included in this program.*

Following are the oil industry radio programs for the week of Jan. 13. All time is central standard, and p.m., unless indicated.

Sunday, Jan. 13

8:00-9:00 a.m.—KFDM, Magnolia Petroleum Co., religious service.

11:00-12:00 a.m.—KFDM, Magnolia Petroleum Co., religious service.

12:00-1:00—WHK, Pocahontas Oil Co., "Blue Flash Indians" (orchestra).

12:00-1:00—KFDM, KPRC, Magnolia Petroleum Co., Star quartet.

6:30-7:00—KFOX, Hancock Oil Co., orchestra.

11:00-1:00 a.m.—KFON, Hancock Oil Co., "All Star Nite."

6:00-7:00—WGN, WTMJ, KSG, WDAF, WOW, WSTP, WEBC, WOH, WOC, Standard Oil Co. of Indiana, Chicago Symphony Orchestra.

Monday, Jan. 14

12:35-1:00—KFDM, Magnolia Petroleum Co., organ recital.

5:30-6:30—WHK, Pocahontas Oil Co., "Blue Flash Indians" (orchestra).

7:30-8:00—KFOX, Hancock Oil Co., orchestra.

8:00-9:00—KFYM, WRR, Magnolia Petroleum Co., Magnolia band and orchestra, Dallas.

Tuesday, Jan. 15

12:30-1:00—KFDM, WFAA, Magnolia Petroleum Co., Magnolia Refinery Band.

6:00-7:00—WBAL, The American Oil Co. Amoco Motorists Hour.

7:30-8:45—KFOX, Hancock Oil Co., orchestra.

6:30-7:00—WTAM, WLW, Standard Oil Co. of Ohio.

6:30-7:00—WEAF, WEEI, WTIC, WJAR, WTAG, WCSH, WGY, WGR, Standard Oil Co. of New York, Soconyland Sketch, over National Broadcasting Co. chain.

8:00-10:00—KFDM, Magnolia Petroleum Co., Magnolia orchestra.

Wednesday, Jan. 16

12:30-1:00—KFDM, Magnolia Petroleum Co., studio program.

7:30-9:00—KFOX, Hancock Oil Co., orchestra.

11:00-11:30—KFI, KHQ, KOMO, KGW, KGO, KPO, Associated Oil Co., Jack and Ethyl, "The Motor Mates," over Pacific coast National Broadcasting Co. chain.

Thursday, Jan. 17

12:35-1:00—KFDM, Magnolia Petroleum Co., organ recital.

5:30-6:30—WHK, Pocahontas Oil Co., "Blue Flash Indians" (orchestra).

1:30-2:00—KFI, KGO, KGW, KOMO, KHQ, KPO, Standard Oil Co. of California, Standard school broadcast, over Pacific coast National Broadcasting Co. chain.

7:30-9:00—KFOX, Hancock Oil Co., orchestra.

9:30-10:30—KFI, KGO, KGW, KOMO, KHQ, Standard Oil Co. of California, Standard Symphony Hour, over Pacific coast National Broadcasting Co. chain.

9:30-10:00—WGN, WTMJ, KSG, WDAF, WOW, WSTP, WEBC, WOH, WOC, Standard Oil Co. of Indiana, Iso-Vis Hour.

Friday, Jan. 18

12:30-1:00—KFDM, WFAA, Magnolia Petroleum Co., Magnolia band.

7:30-9:30—KFOX, Hancock Oil Co., orchestra.

7:00-8:00—WEAF, WTAM, WEEI, WLIT, WRC, WGR, WCAE, WWJ, WSAI, KYW, WCCO, KSD, WOC, WOW, KVOO, WDAF, WFAA, KOA, Cities Service Oil Co., Cities Service Hour, over National Broadcasting Co. chain.

8:00-10:00—KFDM, WRR, Magnolia Petroleum Co., Magnolia Refinery band, Beaumont.

9:00-10:00—KFDM, Magnolia Petroleum Co., Magnolia Refinery band.

9:30-10.00—KWX, Hancock Oil Co.

10:00-10:30—KFI, KTO, KPO, KHQ, KTW, KOMO, KFAI, General Petroleum Corp., General Independents, over Pacific coast National Broadcasting Co. chain.

Saturday, Jan. 19

12:30-1:00—KFDM, KPRC, Magnolia Petroleum Co., miscellaneous entertainment.

7:00-9:00—KFDM, KPRC, Magnolia Petroleum Co., miscellaneous entertainment.

7:30-9:30—KFOX, Hancock Oil Co., orchestra.

9:00-10:00—KFDM, WFAA, Magnolia Petroleum Co., barn dance.

General

KOIL, Monamotor Oil Co., Broadcasting 5:00 to about midnight daily, also morning and afternoon programs.

KEJK, Macmillan Petroleum Corp., Broadcasting 9:00 to 1:00 a.m. daily, also morning and afternoon program.

Charles E. Brown

Charles E. Brown Dies Suddenly in Tulsa

TULSA, Jan. 5.—Requiem mass for Charles Elwell Brown, vice president of Warren Petroleum Co., who died the morning of Jan. 3 following a heart attack, was observed at Christ King church here Saturday at 9 a.m. Interment was in the Catholic cemetery.

Mr. Brown, who was 35 years of age, had been a resident of Tulsa for the past 12 years, and was widely known among Mid-Continent oil men. He came to Tulsa from Philadelphia and became affiliated with the Gypsy Oil Co., and then later the Twin State Oil Co., resigning seven years ago to form with W. K. Warren the Warren Petroleum Co., marketers of natural gasolines.

The removal of Mr. Brown to Tulsa was on advice of physicians, and his health had improved until about three months ago when he was seriously stricken. He was in a Tulsa hospital for several weeks, then removed to his home where he contracted influenza and then pneumonia.

Surviving him are his widow, Mrs. Lillian F. Brown, three children, Charles E. Jr., aged 6 years; Lillian Patricia, 2, and Robert Foulke, 11 months; his mother, Mrs. Elizabeth M. Brown, Dallas, and two sisters, Mrs. H. George Taber Jr., Rye, N. Y., and Mrs. W. E. Pascall, Dallas.

The Louis Allis Co., 133 Stewart St., Milwaukee, Wis., has published a review of its developments during the past year. These include the explosion-proof self-ventilated motor for applications involving less hazard but requiring a fully enclosed motor, and its "Resistallis" protective coating for the windings of open motors.

Irwin Becomes Head White Eagle Co.

TULSA, Jan. 5.—R. R. Irwin, vice president of the White Eagle Oil & Refining Co., was elected president of that company at a meeting of the board of directors on Jan. 4. He succeeds L. L. Marcell, who was made chairman of the board of directors.

Mr. Irwin has been vice president in charge of refining for the White Eagle since the company was organized in 1920. The previous year he was general manager of the White Eagle Petroleum Co., a refining organization which went into the larger corporation.

From 1916 to 1919 Mr. Irwin was wholesale sales manager at Chicago for the Sinclair Refining Co. He came to Sinclair from the Mid-Continent district where he had been connected with the Chanute Refining Co. since he entered the oil business in 1909.

Mr. Irwin is a director of the Western Petroleum Refiners Association. He has been active in that organization for a number of years, serving on important committees.

R. D. Merring, former manager of stations for the White Eagle, was elected vice president in charge of stations at the same board meeting. He succeeds H. F. Bagby, who resigned. Mr. Merring will be succeeded by C. L. Joliffe who has been a district station manager at Mitchell, S. D.

Upholds Right to Drill On Tidelands

LOS ANGELES, Jan. 5.—The Supreme Court for California Dec. 31 handed down a decision holding constitutional the acts of 1921 and 1923 permitting the leasing of tidelands for the purpose of drilling for oil.

Application had been made for permits or leases to drill for oil on tidelands at Rincon in Ventura County and Surveyor General W. S. Kingsbury had refused to act, on the grounds that the state's leasing acts were unconstitutional. This action was taken following a newspaper campaign to "save the beaches."

The Supreme Court held that only a very small percentage of the beaches of the state would be affected by the leasing act. It instructed the surveyor general to issue permits as called for by the leasing acts to two individuals who had carried the matter to the higher court.

The only points on California's coast line affected are small areas at Rincon and Elwood. The last named area is in Santa Barbara County, the scene of the recently discovered oil field. It is doubted if more than two miles at each point will be affected by the decision. The leasing acts provide that drilling on tidelands will not be permitted within two miles of any incorporated city. There is no city near either of the points affected. It is thought that the oil sands at Huntington Beach extend into the ocean, but drilling is prohibited as the city is incorporated.

A movement is already underway among those who have sponsored the "save the beaches" movement to have the next state legislature repeal the acts held constitutional.

Ben C. Belt

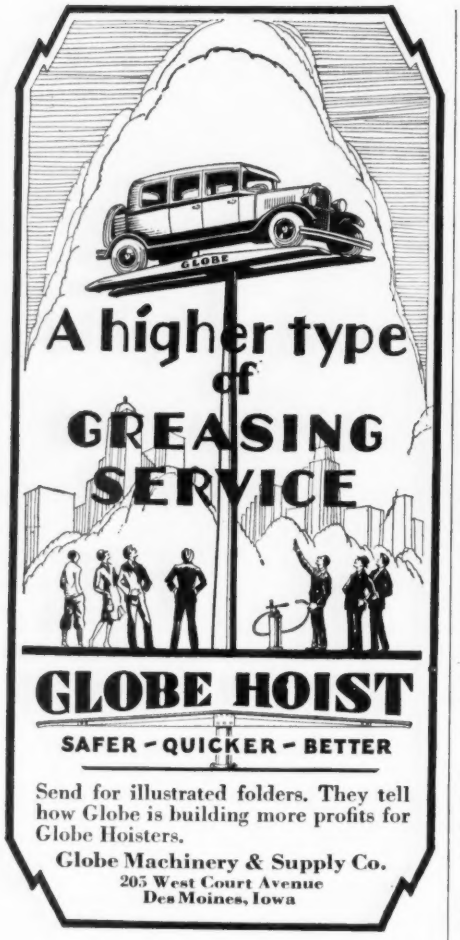
Belt Takes Up Special Geological Work

HOUSTON, Jan. 3.—Ben C. Belt, for three years and a half division chief geologist of the Gulf Production Co., at Fort Worth, has been transferred to southwestern headquarters in Houston, where he will have charge of special work. Mr. Belt is succeeded at Fort Worth by H. B. Fuqua, his assistant for the last three years.

Mr. Belt is one of the most widely known geologists in the United States and Mexico, where he has served the Gulf companies for many years. Except for a short period with the Vacuum Oil Co., about four years ago, and earlier service as general manager of the Buckley interests in the Tampico district, Mr. Belt has seldom been outside the Gulf organization.

Before going to Fort Worth, Mr. Fuqua was zone geologist for the Gulf at Wichita Falls and later at San Angelo.

Both Messrs. Belt and Fuqua are graduates of the University of Oklahoma.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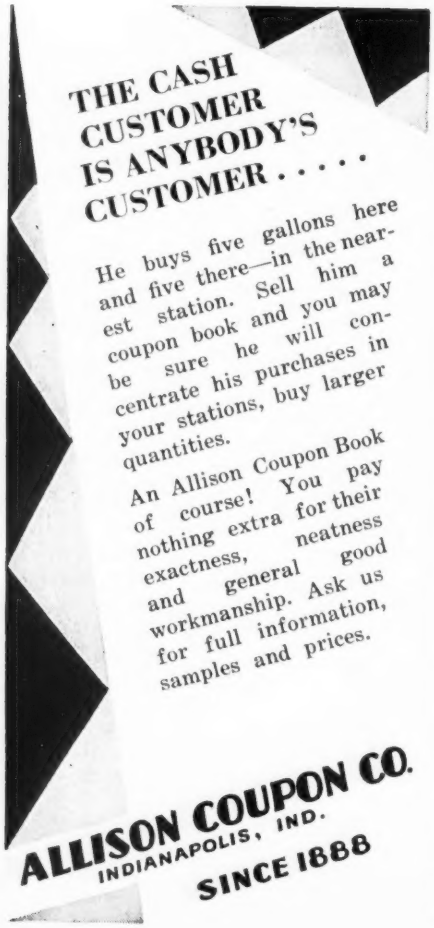
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Texas Oil Land Lease Tangle Grows More Snarled

HOUSTON, Jan. 4

MANDAMUS proceedings to compel issuance of oil and gas leases on University of Texas lands advertised for sale Jan. 2 constitute the next step in the kaleidoscopic acreage snarl at Austin.

The land sale, which had been opposed by the university board of regents, Governor Dan M. Moody, the attorney general's office and the larger oil companies, failed to take place because of a temporary injunction restraining J. T. Robison, land commissioner.

About 103,000 acres out of a total of more than 1,400,000 acres were included in the scheduled sale, which was to have been held under terms of a mandatory state law calling for offerings at least once a month "when a demand exists for them."

Commissioner Robison advertised the lands early in December, setting the sale date six days ahead of the convening of the Texas legislature, Jan. 8.

Protests then were lodged with the land office seeking postponement of the sale, or withdrawal of the lands, on the plea that present conditions in the industry made the offerings inadvisable.

Oil companies protested that development would be stimulated at a time when wildcatting should be held back in the interest of conservation; state and university agencies took the position that only small bonuses could be hoped for under present bidding and questioned existing demand except from speculative interests.

Commissioner Robison's action was criticized mainly because of his setting the sale date ahead of the convening of the legislature, which is to act on withdrawal measures calculated to take the university lands off the market.

Under the existing law the commissioner may not refuse to offer the lands, but protestants set up that he was under no obligation to attempt their sale until after the legislature had an opportunity of setting up withdrawal machinery.

A movement got under way Christmas week to have Governor Moody call a special session of the legislature to pass a withdrawal statute. This fell through about the time the attorney general's office made a ruling that the sale schedule for Jan. 2 could be postponed until later in the month. Commissioner Robison, however, refused to accept that ruling.

Later, Commissioner Robison agreed to postpone sale on lands on which there was "no specific demand," the impression gaining ground at Austin, Dec. 31, that only 20 sections of university leaseholds would be offered under that compromise. Still later, it developed that "specific demand" called for about 49,000 acres of the 103,000 acres advertised for sale Jan. 2.

On the day for which the sale was set, the Fifty-third district court at Austin, on application of the attorney general's department, issued a temporary injunction restraining Robison from offering more than 49,000 acres. The University of Texas regents joined in the application.

The next phase of the controversy developed, Jan. 2, when Robison opened and read bids on more than 50,000 acres advertised for sale but which, the commissioner says, had not been covered by the injunction. Sale of leases on which the bids were opened had been postponed until Jan. 22.

Immediately after opening the bids, he announced their rejection. This, he pointed out, left the way open for bidders to seek mandamus requiring him to lease the land.

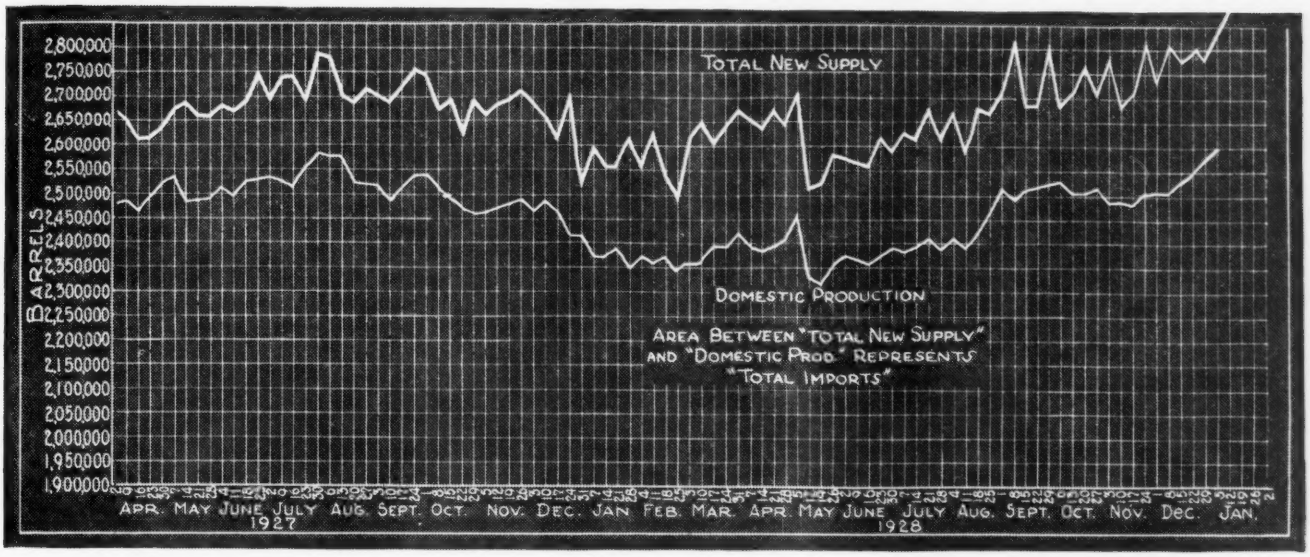
Robison contends this course is permitted under the injunction, whereas Assistant Attorney General Trueheart holds that Robison's action violates the court order.

As the week ended, Commissioner Robison was reported at work on a motion to dissolve the injunction. Lloyd Price, Fort Worth attorney, representing west Texas clients, announced he was preparing mandamus proceedings to be filed in supreme court asking that Robison be directed to open bids covered by the injunction and make awards. Plans were also going ahead for the passage of concurrent resolutions, or bills, at the beginning of the forty-first legislature to prevent present sale of university lands.

Legislation cannot be made retroactive, however, so state officials were unable to say what would be the outcome of the fight against sale of lands already listed and advertised. Where bids have been made, it is believed the dispute will have to be threshed out in the courts.

LOS ANGELES, Jan. 3.—Hillman-Long, Inc., dealers in land and leases and Independent oil operators, announce the removal of their Los Angeles offices from the Petroleum Securities Building to the Subway Terminal Building, effective Jan. 1.

Daily Average Crude Oil Production and Imports



Daily average gross output of United States, by fields, for week ending with dates below as compiled by American Petroleum Institute

PRODUCTION SUMMARY

	Jan. 5	Dec. 29
Production east of Rockies	1,876,450	1,872,150
Increase		4,300
Total production in U. S.	2,591,050	2,581,050
Increase		10,000
Crude oil imports	354,571	199,714
Increase		154,857
Total crude supply	2,945,621	2,780,764
Increase		164,857

OKLAHOMA

	Jan. 5	Dec. 29
Braman	3,750	3,750
Blackwell	3,100	2,950
Hubbard	2,250	2,250
Thomas	950	950
Tonkawa	11,500	11,500
Garber	6,800	6,800
Burbank	24,300	24,100
Osage, outside Burbank	26,300	26,300
Cushing	21,000	20,900
Yale Jennings	7,750	7,750
Davenport	1,700	1,700
Bristow-Slick	19,600	19,650
North Okmulgee	14,300	14,300
Pearson	1,700	1,650
Lyons-Deaner	4,050	4,100
St. Louis	136,300	136,700
Allen Dome	27,750	28,000
Cromwell	8,200	8,250
Maud	26,250	26,000
Papoose	3,600	3,600
Oklahoma City	5,650	5,700
Wewoka	5,300	5,300
Seminole	40,250	42,000
Bowlegs	43,550	46,550
Searight	9,100	9,600
Little River	86,700	85,800
Earlsboro	71,450	73,000
Duncan District	7,500	7,500
Graham	4,650	4,650
Fox	1,500	1,500
Healdton	13,400	13,450
Hewitt	8,850	8,900
Scholem Alechem	14,300	14,300
Others	56,400	53,700
Total, Oklahoma	719,750	723,150
Decrease		3,400

KANSAS

Greenwood County	24,050	24,100
Florence-Covert	950	950
Peabody-Elbing	3,250	3,250
Eldorado-Towanda	12,750	12,800
Augusta-Fox-Bush	3,050	3,050
Rainbow Bend	1,200	1,200
Russell	3,500	3,700
Churchill	7,550	7,200
Oxford	5,700	6,750
Sedgwick County	6,600	6,900
Others	28,500	28,400
Total, Kansas	97,100	98,300
Decrease		1,200

NORTH LOUISIANA

Homer	4,050	4,050
Haynesville	5,550	5,550
Caddo, light	8,950	9,450
Caddo, heavy	2,550	2,800
De Soto, Red River	4,050	4,050
Elm Grove	600	600
Bellevue	900	850
Cotton Valley	3,250	3,200
Urania	6,000	6,000
Pleasant Hill	500	500
Total, North Louisiana	36,400	37,050
Decrease		650

ARKANSAS

El Dorado	4,950	4,950
Champagnolle	11,850	11,400
Smackover, light	7,100	7,100
Smackover, heavy	52,000	52,300
Stephens	1,000	1,000
Nevada	1,500	1,550
Lisbon	1,700	1,650
Others	100	100
Total, Arkansas	80,200	80,050
Increase		150

TEXAS (Outside Gulf Coast)

Panhandle District

	Jan. 5	Dec. 29
Hutchinson County	28,550	28,400
Carson County	5,750	5,800
Gray County	22,300	21,800
Wheeler County	800	700
Others	2,350	2,400
Total, Panhandle District	59,750	59,100
Increase		650

North Texas

Burkburnett	10,000	10,250
Electra	14,100	14,200
Iowa Park and K-M-A	5,000	4,300
Wilbarger	30,500	30,000
Archer County	18,400	18,600
Montague-Cooke	9,600	9,700
Others	600	600
Total, North Texas	88,200	87,650
Increase		550

West Central Texas

Stephens County	7,350	7,450
Eastland-Desdemona	6,900	6,950
Brown County	9,650	9,700
Coleman County	3,850	3,900
Callahan County	3,600	3,600
Shackelford County	11,200	10,300
Young County	8,000	8,100
Throckmorton County	800	800
Palo Pinto County	400	400
Jack County	1,700	1,750
Others	700	700
Total, West Central Texas	54,150	53,650
Increase		450

West Texas

Jones County	6,000	6,200
Mitchell and Scurry Counties	2,900	2,800
Howard County	36,800	37,000
Reagan County	18,500	18,250
Crane and Upton Counties	51,200	51,800
Crockett County	2,500	2,450
Pecos County	73,100	72,700
Winkler County	161,700	156,200
Others	1,900	1,950
Total, West Texas	354,600	349,350
Increase		5,250

East Central Texas

Mexia	6,100	6,200
Currie	500	500
Richland	500	500
Wortham	1,400	1,450
Corsicana-Powell	9,750	9,800
Boggy Creek	2,500	2,200
Nigger Creek	700	700
Total, East Central Texas	21,450	21,350
Increase		100

Southwest Texas

Luling	13,250	13,500
Lytton Springs	950	1,000
Somerset	700	700
Laredo District	10,000	10,200
Dale	900	950
Salt Flat	9,900	8,350
Others	1,400	1,500
Total, Southwest Texas	37,100	36,200
Increase		900
Total, Texas—(Outside Gulf Coast)	615,250	607,300
Increase		7,950

GULF COAST

Coastal Texas

West Columbia	7,300	7,400
Damon Mound	800	950
Big Creek	2,300	2,350
Boling	2,950	3,100
Blue Ridge	6,000	6,300
Pierce Junction	12,000	14,500
Humble	4,500	3,450
Goose Creek	6,500	6,300
South Liberty	6,400	6,200
Hull	10,200	10,000
Saratoga	950	950
Batson	1,300	1,300
Barber's Hill	1,200	850
Sour Lake	2,900	3,000
Spindletop	35,500	35,850
Orange County	3,300	3,400
Sugarland	5,450	4,600
Others	4,800	4,400
Total, Coastal Texas	114,350	114,900
Decrease		550

Coastal Louisiana

Vinton	4,000	4,400
Sulfur Dome	3,000	3,500
Lockport	4,400	4,600
Sweet Lake	950	1,050
Evangeline	900	950
East Hackberry	5,500	5,800
Edgerly	900	1,000
Sorrento Dome	1,100	1,200
Others	1,300	1,350
Total, Coastal Louisiana	22,050	23,850
Decrease		1,800
Total Gulf Coast	136,400	138,750

ROCKY MOUNTAIN

Wyoming

Salt Creek	35,850	31,450
Grass Creek	2,400	2,150
Elk Basin	900	800
Big Muddy	2,450	2,500
Lost Soldier	3,700	3,650
Rock Creek	2,450	2,350
Lance Creek	350	350
Oregon Basin	2,900	3,650
Others	6,600	5,900
Total, Wyoming	57,600	52,800
Increase		4,800

Montana

Cat Creek	1,500	1,550
Sunburst	7,100	7,100
Pondera	800	2,200
Others	.....	100
Total, Montana	9,400	10,950
Decrease		1,550

Colorado

Moffat (Craig)	1,750	1,000
Fort Collins	2,500	2,200
Florence	1,350	1,000
Others	2,500	2,450
Total, Colorado	7,500	6,650
Increase		850

New Mexico

Table Mesa	.....	100
Hogback	500	500
Artesia	1,100	1,050
Rattlesnake	1,900	1,400
Others	100	100
Total New Mexico	3,600	3,150
Increase		450
Total, Rocky Mountain	78,100	73,550
Increase		4,550

California

Santa Fe Springs	120,000	107,500
Long Beach	180,000	183,000
Huntington Beach	49,000	50,000
Torrance	15,500	15,500
Dominguez	10,000	10,000
Rosecrans	6,800	6,800
Inglewood	28,000	28,200
Midway-Sunset	75,000	75,000
Ventura Avenue	50,000	51,800
Seal Beach	28,000	28,500
Others	152,300	152,600
Total California	714,600	708,900
Increase		5,700
Eastern (Including Ill., Ind., Ky., O., W. Va., Pa., and N. Y.)	113,250	114,000
Decrease		750

Compilation Of Mid-Continent Refinery Operations

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National Petroleum News

Mid-Continent Refinery Operations Week Ended January 4 (By Telegraph)

	Kansas	Oklahoma	North & Cent. Texas	West Texas	North La.-Ark.	Total Week Ended Jan. 4
Plants Reporting.....	12	29	24	10	12	87
Da. Av. Cap. (bbls.)..	92,000	160,200	85,100	59,500	54,900	451,700
Da. Cracking Capacity	30,700	52,600	17,200	.....	22,700	123,200
Da. Av. Crude Runs..	54,408 — 8.1	98,310 + 12.3	54,044 — 11.1	32,961 + 10.4	56,969 + 6.0	296,692 + 1.9
Da. Av. Other Oils...	8,855 — 4.6	2,294 — 57.8	4,894 + 0.7	1,104 — 8.7	3,867 + 4.3	21,014 — 14.2
GASOLINE—Gallons						
Stocks, Dec. 28.....	15,703,000	41,855,000	17,656,000	7,190,000	8,306,000	90,710,000
Prod. 12-28 to 1-4....	9,180,000 — 4.1	14,490,000 — 5.9	6,837,000 — 9.6	2,463,000 + 8.8	6,005,000 + 7.7	38,975,000 — 3.5
Ship. 12-28 to 1-4....	8,834,000 + 10.4	15,246,000 + 14.7	5,851,000 — 25.4	2,586,000 — 6.5	7,323,000 + 81.9	39,840,000 + 10.9
Stocks, Jan. 4.....	16,049,000 + 2.2	41,099,000 — 1.8	18,642,000 + 5.6	7,067,000 — 1.7	6,988,000 — 15.9	89,845,000 — 1.0
Ratio Sales to Prod...	96.2%	105.2%	85.6%	105.0%	121.9%	102.2%
KEROSENE—Gallons						
Stocks, Dec. 28.....	6,931,000	6,896,000	2,049,000	36,000	601,000	16,513,000
Prod. 12-28 to 1-4....	1,498,000 — 6.5	1,660,000 + 3.6	1,353,000 — 12.1	80,000 +700.0	613,000 +127.9	5,204,000 + 3.6
Ship. 12-28 to 1-4....	1,687,000 — 5.8	1,816,000 + 43.8	1,392,000 0	12,000 + 20.0	205,000 — 38.8	5,112,000 + 6.7
Stocks, Jan. 4.....	6,742,000 — 2.7	6,740,000 — 2.3	2,010,000 — 1.9	104,000 +188.9	1,009,000 + 67.9	16,605,000 + 0.6
Ratio Sales to Prod...	112.6%	109.4%	102.9%	15.0%	33.4%	98.2%
STOVE DISTILLATE—Gallons						
Stocks, Dec. 28.....	1,852,000	2,722,000	575,000	28,000	82,000	5,259,000
Prod. 12-28 to 1-4....	244,000 +168.1	585,000 — 28.8	163,000 — 21.6	72,000 + 63.6	126,000 + 10.5	1,190,000 — 7.0
Ship. 12-28 to 1-4....	33,000 — 86.9	869,000 + 10.0	315,000 — 5.7	62,000 + 40.9	105,000 + 34.6	1,384,000 — 7.6
Stocks, Jan. 4.....	2,063,000 + 11.4	2,438,000 — 10.4	423,000 — 26.4	38,000 + 35.7	103,000 + 25.6	5,065,000 — 3.7
Ratio Sales to Prod...	13.5%	148.5%	193.3%	86.1%	83.3%	116.3%
GAS OIL—Gallons						
Stocks, Dec. 28.....	4,930,000	25,050,000	3,470,000	8,718,000	5,252,000	47,420,000
Prod. 12-28 to 1-4....	2,027,000 + 44.4	3,732,000 +201.5	1,322,000 + 28.2	1,126,000 + 2.5	2,099,000 + 0.5	10,306,000 + 50.2
Ship. 12-28 to 1-4....	2,450,000 + 63.9	3,685,000 + 15.2	1,749,000 — 5.0	162,000 — 67.3	2,606,000 + 18.6	10,652,000 + 15.4
Stocks, Jan. 4.....	4,507,000 — 8.6	25,097,000 + 0.2	3,043,000 — 12.3	9,682,000 + 11.1	4,745,000 — 9.7	47,074,000 — 0.7
Ratio Sales to Prod...	120.9%	98.7%	132.3%	14.4%	124.2%	103.4%
FUEL OIL—Gallons						
Stocks, Dec. 28.....	21,208,000	46,634,000	42,430,000	38,159,000	20,244,000	168,675,000
Prod. 12-28 to 1-4....	5,077,000 — 11.9	4,787,000 + 14.7	6,005,000 — 11.3	5,821,000 + 10.9	8,488,000 + 0.3	30,178,000 — 0.8
Ship. 12-28 to 1-4....	6,983,000 — 6.9	6,407,000 + 1.1	6,523,000 — 25.9	5,816,000 — 11.8	8,558,000 — 6.0	34,287,000 —10.6
Stocks, Jan. 4.....	19,302,000 — 9.0	45,014,000 — 3.5	41,912,000 — 1.2	38,164,000 + 0.01	20,174,000 — 0.3	164,566,000 — 2.4
Ratio Sales to Prod...	137.5%	133.8%	108.6%	99.9%	100.8%	113.6%

Gasoline Produced by Various Methods, Week Ended January 4

	Kansas	% of Total	Oklahoma	% of Total	North & Cent. Texas	% of Total	West Texas	% of Total	Louisiana-Arkansas	% of Total	Total	% of Total
Straight Run.....	5,366,000	58.5	10,274,000	70.9	4,813,000	70.4	2,447,000	99.4	2,643,000	44.0	25,543,000	65.5
Cracked.....	3,124,000	34.0	3,359,000	23.2	1,613,000	23.6	.....	....	2,682,000	44.7	10,778,000	27.7
Natural.....	690,000	7.5	857,000	5.9	411,000	6.0	16,000	0.6	680,000	11.3	2,654,000	6.8
Total.....	9,180,000		14,490,000		6,837,000		2,463,000		6,005,000		38,975,000	

+ or — columns are % change over previous week.

Gasoline Stocks Lowered When Buying Becomes Heavy

Staff Special—By Telegraph
TULSA, Jan. 8

HEAVIER gasoline buying since Jan. 1 by jobbers who had let their stocks get as low as possible for inventory taking, and export sale, and buying in Louisiana in advance of an increase of 2 cents a gallon in the road tax in that state, caused a substantial increase in gasoline shipments from the 87 Mid-Continent refiners that report their operating statistics to this publication. Shipments in the week ended Jan. 4 totaled 39,840,000 gallons. Shipments from 81 plants in the week ended Dec. 28 totaled 35,159,000 gallons. These two figures are not comparable, however, because figures of six additional plants in west Texas are included in the later week's total.

Before last week the statistics of four west Texas plants were included

Summary for the Month

Production and shipments, all reporting refineries, for four weeks ended Jan. 4. Change in stocks figured from Dec. 7.

GASOLINE

	Gallons
Production	162,948,000
Shipments	153,203,000
Net change in stocks	+9,745,000
Ratio sales to production	94.0%

KEROSENE

	Gallons
Production	22,452,000
Shipments	21,688,000
Net change in stocks	+764,000
Ratio sales to production	96.6%

STOVE DISTILLATE

	Gallons
Production	5,547,000
Shipments	6,275,000
Net change in stocks	—728,000
Ratio sales to production	113.1%

GAS OIL

	Gallons
Production	31,553,000
Shipments	38,951,000
Net change in stocks	—7,398,000
Ratio sales to production	123.4%

FUEL OIL

	Gallons
Production	128,924,000
Shipments	151,945,000
Net change in stocks	—23,021,000
Ratio sales to production	117.9%

in the inland Texas group but when a separate listing was made these four and the six additional plants were included in the west Texas classification which now leaves 24 plants in north and central Texas with 10 plants in the west Texas classification. Reporting plants now total 87.

In Kansas when crude runs were curtailed 4800 barrels daily average gasoline production was reduced 4.1 per cent. Shipments increased 10.4 per cent. Stocks in that district, however, were increased 300,000 gallons. Oklahoma refiners increased crude runs almost 11,000 barrels daily average but gasoline production was curtailed 5.9 per cent. Shipments increased 2,000,000 gallons.

A general reduction in gasoline prices Jan. 1 may have been responsible for a part of this increase in business. One Arkansas refiner booked an export order for 350,000 gallons of gasoline to move before inventory time while several refiners in that district reported jobbers were buying in anticipation of the increase in the state gasoline tax of 2 cents which buying accounted for at least a part of the 1,300 000-gallon reduction in that area. For the field as a whole gasoline stocks were lowered 900,000 gallons. This is the first draft on stocks since the week ended Sept. 21.

Kerosene production and shipments were off in Kansas but were larger in Oklahoma. Production was higher in Arkansas and Louisiana but shipments lost some ground. For the field as a whole kerosene stocks were increased 100,000 gallons with Kansas, Oklahoma and north Texas refiners reporting drafts on stocks and the west Texas, Louisiana and Arkansas refiners increasing their stocks.

Oklahoma refiners reduced distillate production 28.8 per cent while their shipments increased 10 per cent. Stocks in Oklahoma were reduced 10.4 per cent. The heavy business enjoyed by the Oklahoma and north Texas refiners was sufficient to cause the field as a whole to show a draft on stocks although the other areas increased their stocks. The reduction in stocks was approximately 100,000 gallons.

Gas oil stocks were reduced in Kansas, north Texas, Louisiana and Arkansas sufficiently to cause a reduction of 330,000 gallons in the entire field. Both production and shipments showed an increase for the week.

Fuel oil stocks were reduced in all areas except west Texas where stocks increased only 5000 gallons. Stocks for the whole field were reduced 4,100,000 gallons.

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Light Fuel
Neutrals
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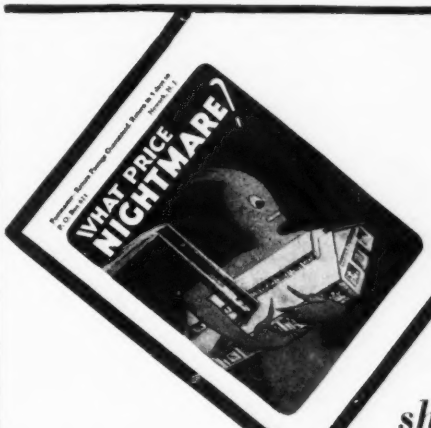

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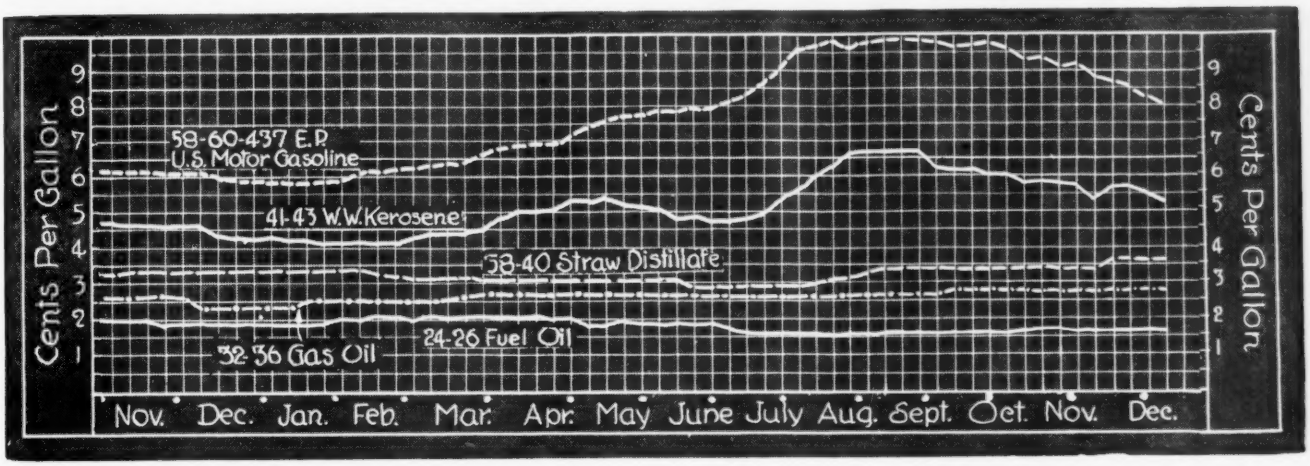
Refinery - Tank Wagon Markets

National Petroleum News

Current Prices of Principal Mid-Continent Refined Products



Prices shown are on Group 3 basis and extended to date shown in Refinery Market Tables Section of this issue

Jobbers Buy Only for Spot Requirements, Gasoline Prices Are Reduced

Staff Special
TULSA, Jan. 5

GASOLINE price reductions in all areas of the Mid-Continent were witnessed during the first week of the new year. Demand from the domestic trade was comparatively light, with buying strictly on a hand-to-mouth basis. The weighted average for 58-60 U. S. Motor in Oklahoma swung under 8 cents for the first time since July 5.

Exporters were generally inactive as far as spot purchases were concerned. One company, however, made a few contracts for gasoline to be supplied by north Texas refiners.

Natural gasolines continued on the down grade. Prices broke sharply after Jan. 1 when no new business developed.

Kerosenes were fractionally lower in Oklahoma and Texas. Demand was light. Distillates and gas oils were in more active demand. Fuel oils were unchanged with demand for the low cold test, low sulfur grades, showing some improvement.

Bright stocks were extremely scarce. Neutral oils were unchanged. Wax was stronger at prices 0.125 to 0.25-cent above those for the last week of the old year.

Gasolines

Oklahoma refiners started the new year with gasoline quotations from 0.125 to 0.50 cent under the levels they had asked the last week of 1928. The maximum quotations on Jan. 2 for 58-60 U. S. Motor in Oklahoma was 8 cents a gallon, while a few refiners had their price range at 7.50 to 7.75 cents a gallon.

Kansas refiners reduced their prices in line with Oklahoma, as did the Arkansas and north Louisiana refiners. North Texas refiners had been out of line with Oklahoma for some time and the wide differential was narrowed for two or three days, but by Jan. 5 prices in the former area had swung down again.

Jobbers apparently took the price reductions as a matter of course. Buying was not stimulated. Contract shipments continued in fair volume but spot shipment inquiries were light.

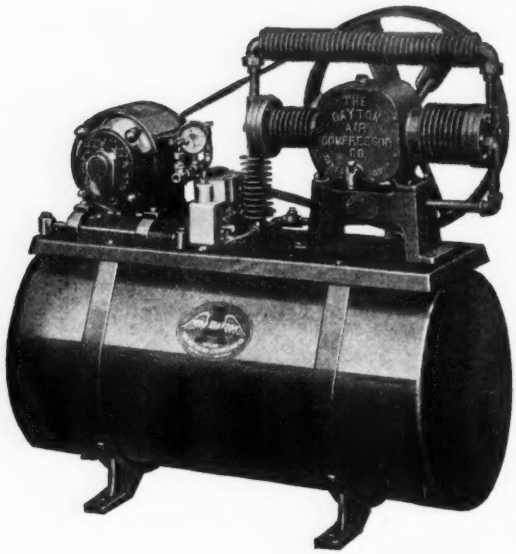
Higher gravity gasolines showed an improvement in demand but prices moved downward along with the U. S. Motor grade.

Several north Texas refiners meanwhile worked out contracts with the Atlantic Refining Co. to supply the export division with 64-66, 375 e. p. gasoline at a price which will be 2 cents under the price for that grade as shown in Platt's Oilgram Gulf export market on date of shipment. The total volume now under contract was placed roughly at 4,000,000 to 5,000,000 gallons a month for the next three months. One report indicated the contracts were renewable for the remainder of the year.

The freight rate from north Texas plants to Gulf terminals is 1.35 cents a gallon, leaving the Atlantic a margin of 0.65 cent a gallon on which to operate. This margin at first glance looks large, but it must be remembered the company has the handling costs at the terminal, insurance, evaporation loss when goods are stored and interest on investment to come out of the 0.65 cent a gallon.

From the standpoint of the refiners, the arrangement is considerably better than the contracts the Standard Oil Co. of New Jersey had three or four years ago. The netback to the

DAYTON AIR COMPRESSORS



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refiner was 2.35 cents a gallon under the Standard's posted price at the Gulf. This gave the Standard a full cent on which to operate, and the Standard dictated the price.

Natural Gasolines

Price of grade AA slid to 6 cents Jan. 5, while price of grade C was down to 5.50 cents. Buying was extremely light and sales managers spent a strenuous week trying to keep their production from accumulating to distress proportions. One or two sizable orders were expected in the field before the middle of the month, but buyers for the most part were waiting out the market as long as possible before placing their orders. Quotations for over the month were fractionally lower than those for spot shipment.

Several inquiries have reached NATIONAL PETROLEUM NEWS as to the accuracy of the price of 9.75 cents published for Oklahoma 60-62, 400 e.p. gasoline on page 98 of the Dec. 26 issue. This price is correct as of December 24. That day being the day before Christmas, virtually all refiners' offices were closed in Tulsa and very little goods was moving on the spot market. One refiner sold one car of this grade of gasoline and that car went for 9.75 cents per gallon.

Kerosenes

Domestic demand for kerosenes continued to be extremely light, as is to be expected at this season of the year. Exporters showed but little interest since Jan. 1 but indications were Jan. 5 that at least one company would be interested in buying some 41-43 gravity kerosene at 4.75 cents a gallon. The last purchases made by this company were at 5 cents a gallon. The same company also has inquired for some higher gravity kerosene but as far as could be learned had made no purchases.

Oklahoma refiners reduced prices fractionally as did the north Texas group. Kansas refiners reported the demand was sufficiently good to keep the bulk of their production moving and they made no price reductions. The demand normally exceeds the production in the Louisiana and Arkansas districts and no price reductions are made there until the differential between Oklahoma prices and those in that district become too narrow and allow either Oklahoma or Texas refiners to compete for business in those states.

Distillates

The cold wave which swept over much of the Middle West shortly after Christmas stimulated demand for heating distillates. Jobbers who

felt the drain on their storage gave rush shipment instructions to their refinery connections and there was considerable shopping around for purchases on the spot market.

Two or three refiners who make distillates reported their contracts were taking all their production and they had withdrawn from the spot market. The new buying had not caused an advance in prices but goods for spot shipment were scarce.

Gas Oils

The cold wave also stimulated demand for gas oils. Low cold test gas oil with low flash and good odor was in active demand. Ordinary gas oil did not show quite as much activity.

Buyers were refiners with cracking units, industrial users, and jobbers who have built up a good home burner business as a result of improvements in the burners which permit consumption of heavier oils.

Prices were advanced slightly in some quarters while other refiners said they had not made any change in prices as yet.

Fuel Oils

Zero cold test fuel oils were more active the first week of the new year. Refiners making low cold test fuel oils with fair viscosity and low sulfur content found no difficulty in moving their production. Many of them were forced to draw on storage in order to supply their customers.

Buying for over the month was comparatively good in most quarters. Prices at which the business went, however, were about in line with prices obtained for spot goods.

Refiners who make a fuel oil of comparatively high cold test reported they had some difficulty in moving their production and those who have storage facilities indicated they were putting their surplus into storage at the present time, or burning as much as possible in their plants.

Cylinder Stocks, Neutral Oils

Several Oklahoma refiners attribute the advance in Pennsylvania crudes Jan. 4 to the recent heavy demand for Pennsylvania bright stocks. Reports from Pennsylvania have indicated for some weeks past that domestic and export demand was strong. This in fact has been clearly reflected in the Mid-Continent. Virtually every refiner making bright stock has reported he was sold up for the present. Prices advanced from 2 to 3 cents a gallon between Dec. 1 and Jan. 1, and reports indicated the buyers were unable to obtain as much goods as they desired.

Neutral oils showed virtually no changes either in price or demand. Several refiners were moving much of their production of these oils on contracts made last spring and summer.

Wax showed more strength with buying better after Jan. 1. Prices advanced fractionally.

Chicago Resale Market

Spot Gasoline Shipment Light

Staff Special
CHICAGO, Jan. 5

THE Chicago gasoline market was relatively quiet during the week ended Jan. 5 with no outstanding developments. Movement of spot gasoline was light, although several refiners said their contract business was holding up well. In the main, however, jobbers were still following their policy of buying only for immediate requirements and a considerable number of orders were for rush shipment. Reports from several quarters indicated that gasoline consumption has been heavy for the season.

The general trend of the gasoline market continued downward and prices of all grades were approximately 0.50 cent lower on Jan. 5 than on Dec. 29. Effective Monday, Dec. 31, the majority of the major Oklahoma refiners, who had been holding U. S. Motor gasoline at 8.50 cents, reduced their price 0.50 cent on all grades. This brought their U. S. Motor price to 8 cents, where it remained throughout the week.

The low range of the U. S. Motor market remained generally unchanged most of the week with the smaller Oklahoma refiners and most of the Chicago marketers getting 7.75 cents. However, several sellers lowered their prices Jan. 4 and 5 and the bulk of sales of U. S. Motor gasoline in Chicago Jan. 5 were at 7.625 to 8 cents. One marketer reported a few sales of Oklahoma U. S. Motor at 7.375 cents.

Marketers reported they could buy U. S. Motor freely at 7.50 cents in Oklahoma and in numerous cases could obtain goods at 7.25 and 7.375 cents for resale purposes.

Gasoline from west Texas was selling at generally unchanged prices. The bulk of sales reported on west Texas U. S. Motor ranged from 7.25 to 7.75 cents, f.o.b. Group 3.

The 25-cent advance in Pennsylvania crudes, effective Jan. 4, aroused considerable comment among the Chicago trade. This advance brings the posted price of Pennsylvania grade crude in Bradford and Alleghany districts to $4.10, which is the highest level reached since June, 1924.

Higher gravity gasolines enjoyed only a fair demand this week. Several sellers said they were expecting a better call for these grades when sustained cold weather set in. One refiner said his anti-knock gasoline was moving better than it did last year, while his high test demand had fallen off.

Prices on all grades were off approximately 0.25 cent during the week. The 60-62, 437 e.p. gasoline moved mostly at 8 to 8.25 cents Dec. 31, at 7.875 to 8.25 cents Jan. 3 and closed Jan. 5 at 7.75 to 8.25 cents. The bulk of sales of 60-62, 400 e.p. were at 8.375 to 8.75 cents until Jan. 2 and at 8.25 to 8.50 cents thereafter. The 64-66, 375 e.p. grade opened Dec. 31 at 9.125 to 9.50 cents; was at 9 to 9.25 cents Jan. 2 and closed Jan. 5 at 8.875 to 9.25 cents.

Kerosenes were in little demand and prices were generally unchanged. Sales of 41-43 w.w. grade were reported at 5.25 to 5.50 cents, but the bulk of goods moved at 5.375 to 5.50 cents, throughout the week.

Most sellers enjoyed an active demand for furnace oils this week, while others said their business, while good, was not as heavy as last week. The severe cold during part of the week was the main factor in holding demand up. Prices continued strong, although generally unchanged. The best grades of distillate and gas oils were still comparatively scarce and were commanding somewhat higher prices.

Sales of 38-40 straw distillate were reported at 3.50 to 3.75 cents, although the bulk of goods moved at 3.50 to 3.625 cents all week.

Demand for ordinary 32-36 dark gas oil was better this week and prices were fractionally higher. Bulk of movement was at 2.50 to 2.625 cents most of the week and at 2.625 cents flat on Jan. 5. The 32-36 dark zero grade moved mostly at 2.875 to 3 cents and the 32-36 straw zero at 3 to 3.25 cents. All grades of fuel oils were generally unchanged in price over last week.

Generally fair weather will prevail in southern portions of the Standard of Indiana territory next week and generally unsettled in other portions. Colder weather expected first and last of next week in most sections except that near normal temperatures will prevail in southern sections.

Pyrene Mfg. Co., Newark, N. J., brings home to the plant owner the hazards of fire without proper protection in "What Price Nightmare," a bulletin in colors. It shows various types of equipment the company puts out for extinguishing fires, whether in the home or the large industrial plant.

Refinery Markets on Light Oils and Lubricants

Prices given below are in cents per gallon, F. O. B. refinery, except where $ is shown

(These Refinery Prices compiled in the OIL PRICE HANDBOOK for a whole year)

GASOLINE AND NAPHTHA

OKLAHOMA (Weighted Average Prices)

	Prices Jan. 7	Prices Dec. 31	Prices Dec. 24
58-60 U.S. Motor, 437 e.p.	7.9390	8.1167	8.5074
60-62 437 e.p. gasoline....	8.1761	8.5341	8.8029
60-62 400 e.p. gasoline....	8.5000	8.9167	9.7500
64-66 375 e.p. gasoline....	9.5625	9.5833	10.2500

All above weighted average prices are effective on Monday on the dates shown at the top of the columns.

"WEIGHTED average prices above clearly reflect the .50 cent reduction by a majority of refiners in Oklahoma which was announced at the beginning of the new year. Majority of the reporting refiners were quoting 8 cents for U. S. Motor while a few reporting refiners have reported sales at 7.50 cents up. A check of reports of the lower prices revealed that goods in virtually every case, has not been up to specifications.

"Despite inclement weather in much of the marketing territory spot sales were greater in the first week of January than for the last week of 1928. This may be attributed in part to a partial replenishment of stocks which had been depleted for inventory, and also to lower prices prevailing. A total of 173 cars of U. S. Motor was sold on the spot market from Oklahoma plants in the last week of December as compared with 231 cars first week of new year."

(The above weighted averages are made up from confidential daily reports of all gasoline spot market sales—for shipment in 10 days—from Oklahoma refineries only and representing 82.6 per cent of the state's refining capacity. The above prices do not include prices on sales for "over the month," for contracts, or to brokers or on shipments to company owned stations. Records of the reporting refiners are checked periodically to verify the accuracy of their reports.—Editor.)

	Prices Jan. 7	Prices Dec. 31	Prices Dec. 24
OKLAHOMA			
48-50 450 e.p. naphtha...	†7.25 – 7.50	†7.75	†8.00
50-52 450 e.p. naphtha...	†7.25 – 7.50	†7.75	†8.00
56-58 450 e.p. gasoline....	7.375– 7.625	7.75 – 8.00	8.25
58-60 450 e.p. gasoline....	7.50 – 7.75	7.75 – 8.25	8.50
64-66 390 e.p. gasoline....	8.75 – 9.25	8.75 – 9.25	9.25 – 9.50
68-70 350-360 e.p. gasoline	9.75 –10.00	10.00 –10.25	10.00 –10.25
PENNSYLVANIA			
52-54 Naphtha.....	9.00 –10.00	9.25 –10.00	‡9.25 –10.00
54-56 Naphtha.....	9.25 –10.00	9.50 –10.00	‡9.25 –10.00
58-60 U.S. Motor 437 e.p.	10.25 –10.50	10.25 –10.50	10.25 –10.50
60-62 400-410 e.p. gasoline	10.50 –11.50	10.75 –11.50	10.75 –11.50
64-66 390 e.p. gasoline....	11.50 –12.00	11.75 –12.50	11.75 –12.50
68-70 Str-run gas. 350-360 e.p.....	12.50 –13.25	12.50 –13.25	12.75 –13.50

‡One seller quoting.

OHIO (Quotations of S. O. Ohio)			
Winter Specification Motor Gasoline.....	11.50	11.50	11.75
KANSAS (F. O. B. refinery Kansas destination)			
58-60 U.S. Motor 437 e.p.	8.25 – 8.50	8.25 – 8.75	8.75
60-62 400 e.p. gasoline....	9.25 – 9.50	9.25 – 9.50	9.50
64-66 375 e.p. gasoline....	10.25	10.25	10.25
NORTH TEXAS			
48-52 450 e.p. naphtha...	†7.00	†7.00	†7.50
56-58 450 e.p. gasoline....	†7.00	†7.00 – 7.25	†7.50 – 7.75
58-60 450 e.p. gasoline....	†7.00	†7.25 – 7.50	†7.50 – 7.75
58-60 U.S. Motor 437 e.p.	7.25 – 7.50	7.50 – 7.75	7.75 – 7.875
60-62 400 e.p. gasoline....	8.00	8.00 – 8.25	8.50 – 8.75
64-66 390 e.p. gasoline....	8.25 – 8.375	9.00 – 9.25	9.00 – 9.25
64-66 375 e.p. gasoline....	8.375– 8.625	9.50	9.50
68-70 350-360 e.p. gasoline	9.50 – 9.75	10.00 –10.25	10.00 –10.25

	Prices Jan. 7	Prices Dec. 31	Prices Dec. 24
NORTH LOUISIANA (N. La., Ark. and Miss. destination)			
58-60 U.S. Motor gasoline	8.25	8.50	8.50
ARKANSAS (Arkansas destination only)			
56-58 450 e.p. gasoline....	7.75	8.00	8.00
58-60 450 e.p. gasoline....	8.00	8.25	8.25
58-60 U.S. Motor 437 e.p.	8.25	8.50	8.50 – 8.75
‡CALIFORNIA			
54-58 U.S. Motor 437 e.p.	9.00 –12.50	9.00 –12.50	9.00 –12.50
‡‡58-61 375-400 e.p. gasoline	10.00 –13.50	10.00 –13.50	10.00 –13.50
42-45 Eng. dis. 445-480 e.p.....	7.00 – 8.00	7.00 – 8.00	7.00 – 8.00

‡3c tax to be added to California gasoline prices if used in state.
‡‡Gravity changed from 437 e.p. to 375-400 e.p. Dec. 17.

NATURAL GASOLINE

(Note: End point of all grades, not over 375 F. Corrosion test adopted Oct. 1, 1927; A.S.T.M Method D130-27T; doctor test, July 2, 1928.)

OKLAHOMA			
Grade AA, 80-87.9, 90% Recovery.....	†6.00	6.50 – 7.00	7.50
Grade A, 72-79.9, 90% Recovery.....	†7.25 – 7.50	7.75 – 8.00	8.375– 8.625
Grade BB, 84-92, 85% Recovery.....	5.625	6.00 – 6.25	6.50
Grade B, 76-83.9, 85% Recovery.....	†5.875– 6.00	6.50	6.75 – 7.00
Grade C, 80-92, 78% Recovery.....	†5.50	6.00 – 6.25	6.50
NORTH TEXAS (F. O. B. Breckenridge)			
Grade AA, 80-87.9, 90% Recovery.....	†6.00 – 6.125	6.50 – 7.00	7.50
Grade A, 72-79.9, 90% Recovery.....	†7.25 – 7.50	7.75 – 8.00	8.375– 8.625
Grade BB, 84-92, 85% Recovery.....	†5.625	6.00 – 6.25	6.50
Grade B, 76-83.9, 85% Recovery.....	†5.875– 6.00	6.50	6.75 – 7.00
Grade C, 80-92, 78% Recovery.....	†5.50	6.00 – 6.25	6.50
NORTH LOUISIANA (F. O. B. Monroe District)			
Grade AA.....	†6.75	†8.00	†8.00
Grade BB.....	†6.00 – 6.25	†6.75	†6.75
Grade C.....	†6.00	†6.50	†6.50
CALIFORNIA			
75-85, 375-390 e.p. blend	8.25 – 8.50	8.00 – 8.50	8.00 – 8.50

MOTOR FUEL BLENDS

OKLAHOMA			
64-66 Blend 437 e.p.....	7.75	7.75	8.00 – 8.25

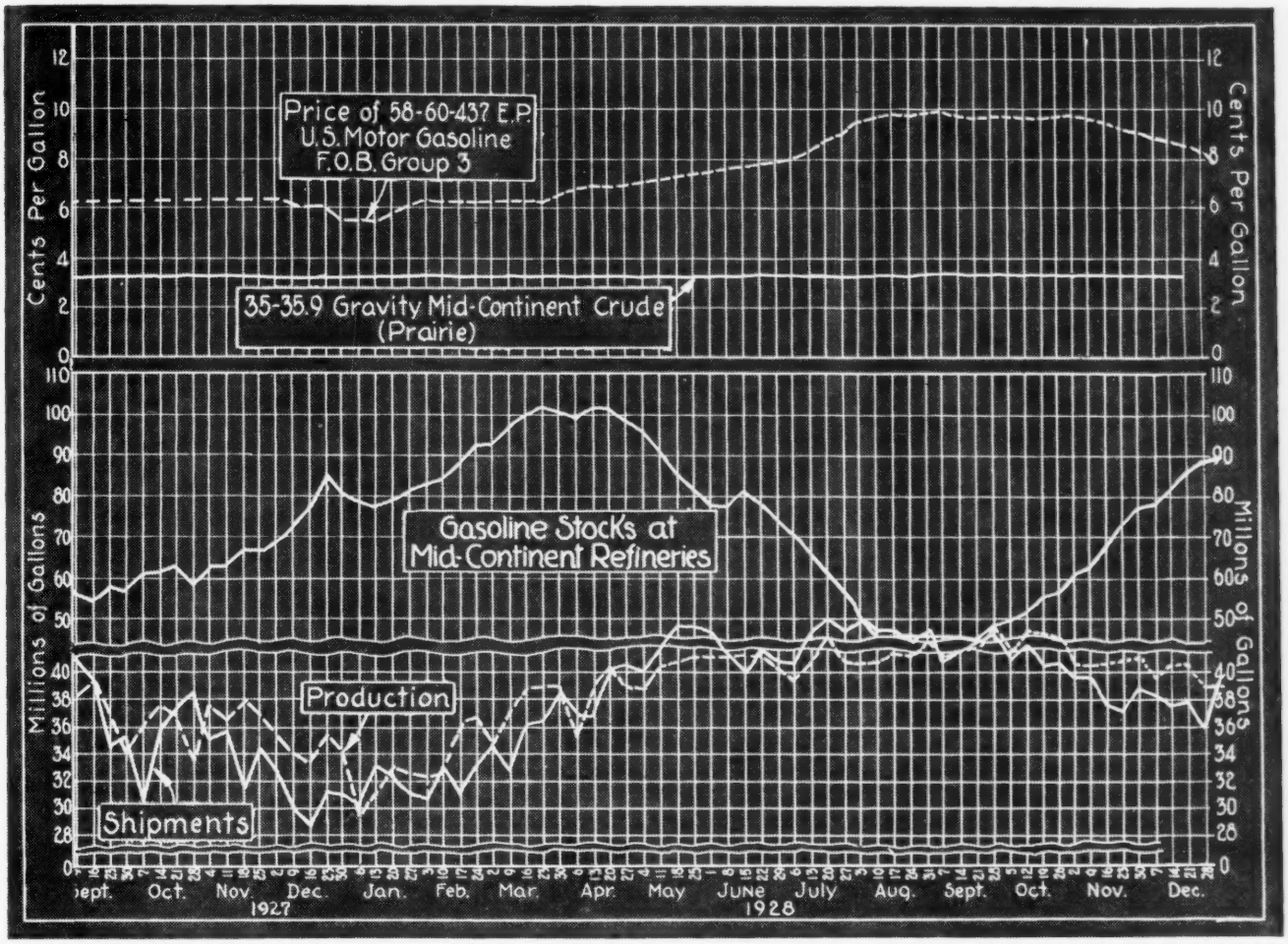
BURNING OILS

PENNSYLVANIA			
45 w.w. kerosene.....	7.25 – 7.75	7.25 – 7.625	7.25 – 7.625
46 w.w. kerosene.....	7.625– 8.00	7.50 – 8.00	7.50 – 8.00
47 w.w. kerosene.....	7.75 – 8.75	7.75 – 8.25	7.75 – 8.50
300 mineral seal.....	7.25 – 7.875	7.25 – 7.75	7.375– 7.75
OKLAHOMA			
41-43 w.w. kerosene.....	5.375– 5.50	5.50	5.50 – 5.75
42-44 w.w. kerosene.....	6.00	6.00 – 6.25	6.25
KANSAS (F. O. B. refinery Kansas destination)			
41-43 w.w. kerosene.....	5.75 – 6.00	5.75 – 6.00	5.75 – 6.00
42-44 w.w. kerosene.....	6.25 – 6.50	6.25 – 6.50	6.25 – 6.50
NORTH TEXAS			
40-42 w.w. kerosene.....	5.00	5.375	5.375– 5.50
41-43 w.w. kerosene.....	5.125– 5.375	5.50 – 5.625	5.625– 5.75
NORTH LOUISIANA (N. La., Ark. and Miss. destination)			
41-43 w.w. kerosene.....	6.00 – 6.25	6.00 – 6.25	6.25 – 6.50
ARKANSAS (Arkansas destination only)			
42-44 kerosene.....	6.50	6.50	6.50
CALIFORNIA			
38-40 w.w. kerosene.....	6.50 – 7.00	6.50 – 7.00	6.50 – 7.00

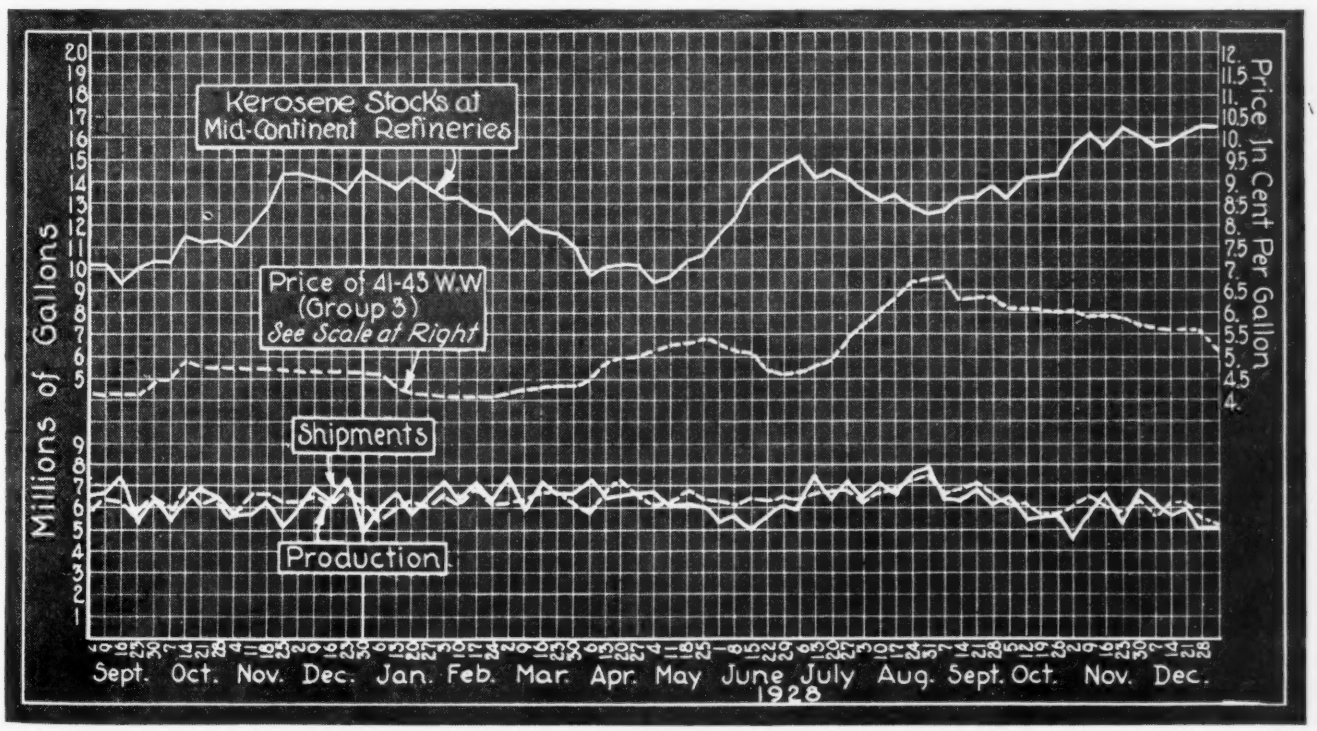
†Prices nominal ††Only one refiner quoting *Quotations only **Represents both sales and quotations

Barometer of Mid-Continent Refinery Market—Week Ending January 4

Charted Course of Prices, Production, Shipments, Stocks of Principal Refined Products, Week by Week, From Reports Made by 81 Plants to National Petroleum News



Prices shown above are extended to date shown in Refinery Market and Crude tables in Market section of this issue and stocks, shipments and production are extended to date *as shown in the table on page 110*



Refinery Markets on Wax, Lubricants and Heavy Oil Products

Prices given below are in cents per gallon, F. O. B. refinery, except where $ is shown

(For quick reference to Refinery Prices, get the OIL PRICE HANDBOOK, published annually)

NEUTRAL OIL

PENNSYLVANIA	Prices Jan. 7	Prices Dec. 31	Prices Dec. 24
Vis.		**(Viscosity at 70°F.)**	
200 No. 3 Assoc. Filt.....	28.00 –29.00	28.00 –29.50	28.00 –29.00
180 No. 3 Assoc. Filt.....	25.50 –27.50	25.50 –27.00	25.00 –27.00
150 No. 3 Assoc. Filt.....	22.00 –24.50	22.00 –24.50	22.00 –24.00
		(Non Viscous)	
34 Grav. 330-340 Flash..	7.25 – 8.50	7.25 – 9.00	7.75 – 9.00
36 Min. Neut., 300-305 Flash.....	7.25 – 9.00	7.00 – 7.75	7.00 – 7.75
****OKLAHOMA**			
Vis. Color		**(Viscosity at 100°F.)**	
100—No. 2.....	5.50 – 6.00	5.50 – 6.00	5.50 – 6.00
150—No. 3.....	7.50 – 8.50	7.50 – 8.50	7.50 – 8.50
150—No. 4.....	6.50 – 7.50	6.50 – 7.50	6.50 – 7.50
180—No. 3.....	8.75 – 9.50	8.75 – 9.50	8.75 – 9.50
180—No. 4.....	8.75 – 9.75	8.75 – 9.75	8.75 – 9.75
180—No. 5.....	8.50 – 9.50	8.50 – 9.50	8.50 – 9.50
200—No. 3.....	9.50 –10.00	9.50 –10.00	9.50 –10.00
200—No. 4.....	9.25 –10.00	9.25 –10.00	9.25 –10.00
200—No. 5.....	8.50 – 9.00	8.50 – 9.00	8.50 – 9.00
220—No. 3.....	12.50 –13.50	12.50 –13.50	12.50 –13.50
220—No. 4.....	12.25 –12.50	12.25 –12.50	12.25 –12.50
220—No. 5.....	11.50 –12.00	11.50 –12.00	11.50 –12.00
240—No. 3.....	13.00 –13.50	13.00 –13.50	13.00 –13.50
240—No. 4.....	12.00 –13.00	12.00 –13.00	12.00 –13.00
240—No. 5.....	11.00 –13.00	11.00 –13.00	11.00 –13.00
280—No. 3.....	14.00 –15.50	14.00 –15.50	14.00 –15.50
280—No. 4.....	13.00 –14.00	13.00 –14.00	13.00 –14.00
280—No. 5.....	12.00 –13.00	12.00 –13.00	12.00 –13.00
300—No. 5-6.....	15.00 –17.00	15.00 –17.00	15.00 –17.00
GULF COASTAL			
Vis. Color		**(Viscosity at 100°F., pour test 0)**	
100—No. 2 Pale.....	7.00 – 7.50	7.00 – 7.50	7.00 – 7.50
200—No. 3 Pale.....	10.00 –10.75	10.00 –10.75	10.00 –10.75
300—No. 3 Pale.....	11.00 –11.75	11.00 –11.75	11.00 –11.75
500—No. 3½ Pale	12.50 –13.50	12.50 –13.50	12.50 –13.50
750—No. 4 Pale.....	15.50 –16.00	15.50 –16.00	15.50 –16.00
200—No. 5½ Red Oil....	8.50 – 9.00	8.50 – 9.00	8.50 – 9.00
300—No. 5½ Red Oil....	9.25 – 9.75	9.25 – 9.75	9.25 – 9.75
500—No. 6 Red Oil.....	10.50 –11.25	10.50 –11.25	10.50 –11.25
750—No. 6 Red Oil.....	13.50 –14.00	13.50 –14.00	13.50 –14.00
CALIFORNIA			
Vis. Color		**(Viscosity at 100°F.)**	
100—No. 3.....	9.50 –10.00	9.50 –10.00	9.50 –10.00
200—No. 3.....	11.50	11.50	11.50
300—No. 3.....	13.00	13.00	13.00
450—No. 3.....	15.50	15.50	15.50
550—No. 3.....	16.50	16.50	16.50
600—No. 3.....	17.00	17.00	17.00
200—No. 5.....†	11.00	11.00	11.00
300—No. 5.....	12.00	12.00	12.00
400—No. 5.....	14.00	14.00	14.00
500—No. 5.....	15.00	15.00	15.00
600—No. 5.....	16.00	16.00	16.00
700—No. 7.....	18.00	18.00	18.00

CYLINDER STOCKS

****OKLAHOMA**			
190-200 Vis. at 210° Brt. St.	32.00	31.00 –32.00	31.00 –32.00
150-160 Vis. at 210° Brt. St.	29.00	29.00	29.00
600 E. St. 140-150 Vis.-210°	18.00 –19.00	18.00 –19.00	17.50 –18.00
600 St. Ref. Olive Green..	10.00 –12.00	10.00	8.50 –10.00
600 St. Ref. Dark Green..	8.00	8.00	7.00 – 8.00
Black Oil.....	5.00	5.00	5.00
PENNSYLVANIA		**(1-inch Immersion Test)**	
600 Steam Refined.....	25.00 –26.50	24.00 –25.00	23.00 –24.00
650 Steam Refined.....	30.00 –31.50	30.00	26.00 –30.00
600 Flash.....	33.00 –34.00	‡33.00	29.00 –30.00
625 Flash.....	‡43.00	‡42.00	36.50 –40.00
600 Warren E.....	29.00 –30.00	‡29.00	‡26.00
600 Oil City E.....	27.50 –29.00	26.00 –28.00	24.50 –25.00
600 D Filtered.....	32.00 –33.00	30.00 –32.00	‡29.00
Cold Test Stock, 40-50p. p., 140-150 vis. at 210° 540-550 flash, No. 8 color	41.00 –43.00	38.00 –43.00.	37.00 –38.00
40-50 p.p., 140-150 vis. at 210°, 540-550 flash, No. 6-6½ color diluted....	40.00 –41.00	38.50 –41.00	36.00 –37.00

‡One seller quoting.
‡‡Two sellers quoting.

WAX

	Prices Jan. 7	Prices Dec. 31	Prices Dec. 24
PENNSYLVANIA Per pound, New York			
122-124 white crude scale	5.125– 5.25	5.25	5.125– 5.25
124-126 white crude scale	5.25	5.25 – 5.375	5.25 – 5.50
OKLAHOMA			
**124-126 White Crude Scale.....	5.00 – 5.25	4.75 – 5.125	4.75 – 5.125
CALIFORNIA			
White crude scale, per pound, ton lots.....	6.00 – 6.50	6.00 – 6.50	6.00 – 6.50

FUEL OIL

PENNSYLVANIA (For outside Pittsburgh district)			
36-40 fuel oil.....	4.75 – 5.25	4.75 – 5.25	4.75 – 5.25
30-34 fuel oil.....	4.625	4.50	4.50 – 4.75
28-32 fuel oil.....	4.625	4.50	4.50 – 4.625
OKLAHOMA			
38-40 straw distillate.....	3.50 – 3.625	3.50 – 3.625	3.50 – 3.625
36-38 straw distillate.....	3.375– 3.50	3.375– 3.50	3.375– 3.50
32-36 gas oil, straw.....	‡2.75 – 3.00	‡2.75 – 3.00	‡2.75 – 3.00
32-36 dark gas oil.....	‡2.625– 2.875	‡2.50 – 2.875	‡2.50 – 2.875
28-30 fuel oil (in bbls.)...	$0.85 – 0.90	$0.85 – 0.90	$0.85 – 0.90
26-28 fuel oil (in bbls.)...	$0.675– 0.725	$0.675– 0.725	$0.675– 0.725
24-26 fuel oil (in bbls.)...	$0.625– 0.675	$0.625– 0.675	$0.625– 0.675
22-26 fuel oil (in bbls.)...	$0.55 – 0.625	$0.55 – 0.625	$0.55 – 0.625
18-22 fuel oil (in bbls.)...	$0.55 – 0.60	$0.55 – 0.60	$0.55 – 0.60
16-18 fuel oil (in bbls.)...	$0.55	$0.55	$0.55
14-16 fuel oil (in bbls.)...	$0.525– 0.55	$0.525– 0.55	$0.525– 0.55

‡Zero cold test gas oil sells for 0.125 to 0.25 cent higher.

KANSAS (F. O. B. refinery Kansas destination)			
38-40 straw distillate.....	3.625– 3.75	3.625– 3.75	3.625– 3.75
36-38 straw distillate.....	3.25 – 3.50	3.25 – 3.50	3.25 – 3.50
32-36 gas oil.....	2.75 – 3.00	2.75 – 3.00	2.75 – 3.00
24-26 fuel oil.....	*$0.75 – 0.80	*$0.75 – 0.80	*$0.75 – 0.80
18-22 fuel oil.....	*$0.70	*$0.70	*$0.70
NORTH TEXAS			
38-40 straw distillate.....	3.25 – 3.375	3.25 – 3.375	3.25 – 3.375
32-36 gas oil, cracked....	2.375– 2.50	2.375– 2.50	2.375– 2.50
32-36 St. reduced gas oil	2.375– 2.50	2.375– 2.50	2.375– 2.50
20-24 Fuel oil.....	$0.50 – 0.55	.....	.....
24-26 fuel oil (in bbls.)...	$0.55	$0.525– 0.55	$0.525– 0.55
NORTH LOUISIANA (N. La., Ark. and Miss. destination)			
32-36 gas oil, dark.....	3.00	3.00	3.00
32-36 gas oil, straw.....	3.00 – 3.25	3.00 – 3.25	3.00 – 3.25
16-20 fuel oil (in bbls.)...	$0.70	$0.70	$0.70
ARKANSAS (Arkansas destination only)			
32-36 gas oil, straw.....	3.00 – 3.25	3.00 – 3.25	3.00 – 3.25
32-36 gas oil.....	3.00	3.00	3.00
28-32 gas oil.....	2.75	2.75	2.75

CALIFORNIA (F. O. B. San Joaquin Valley. At San Francisco, 4c per bbl. more)

14-18 fuel oil (per bbl.)...	$0.60 –$1.00	$0.60 –$0.70	$0.60 –$0.70
14-18 Bunker oil (per bbl.)	$0.70 –$1.00	$0.70 –$1.00	$0.70 –$1.00
30-34 gas oil (per bbl.)...	$1.00 –$1.15	$1.00 –$1.15	$1.00 –$1.15
27 Plus Diesel oil (per bbl.)	$0.90 –$1.00	$0.90 –$1.00	$0.90 –$1.00

PETROLATUMS

PENNSYLVANIA (In barrels, carload lots, f. o. b. refinery. In tank cars ⅝c to ¾c per pound less.) Two refiners quoting.

Snow White.....	8.50 – 8.875	8.50 – 8.75	8.50 – 8.75
Lily White.....	7.625– 7.875	7.625– 7.75	7.625– 7.75
Cream White.....	6.625– 6.875	6.625– 6.75	6.625– 6.75
Light Amber.....	3.625– 4.00	3.625– 3.875	3.625– 3.875
Amber.....	3.375– 3.75	3.375– 3.50	3.375– 3.50
Red.....	3.125– 3.375	3.125– 3.25	3.125– 3.25

PETROLEUM COKE

****OKLAHOMA**

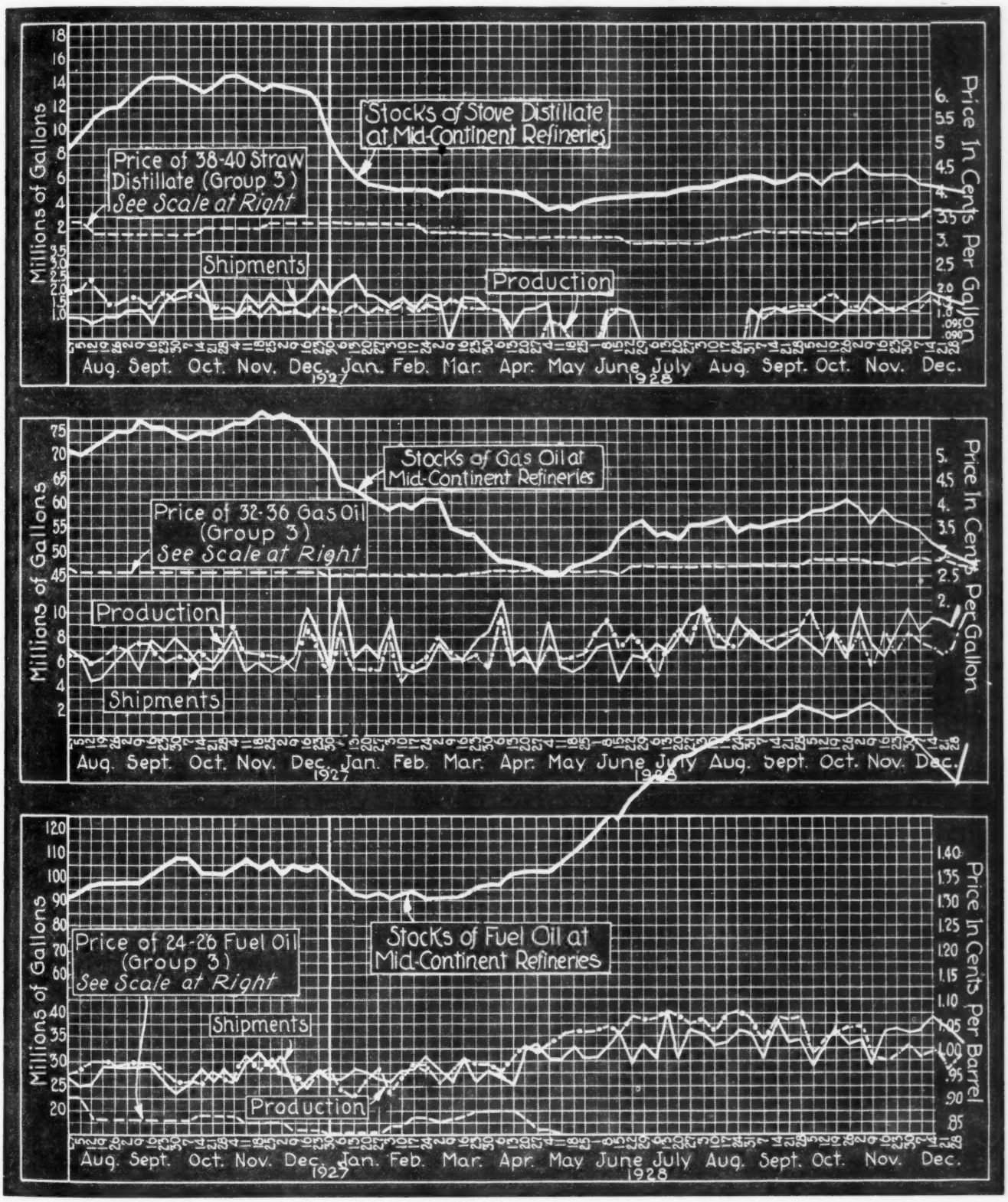
(Per ton in car lots)

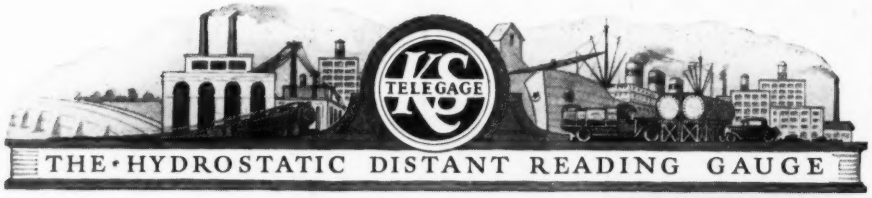
Lump.....	$4.50 – 5.00	$4.50 – 5.00	$4.50 – 5.00
Still run.....	$3.00	$3.00	$3.00
Breeze.....	$2.00	$2.00	$2.00

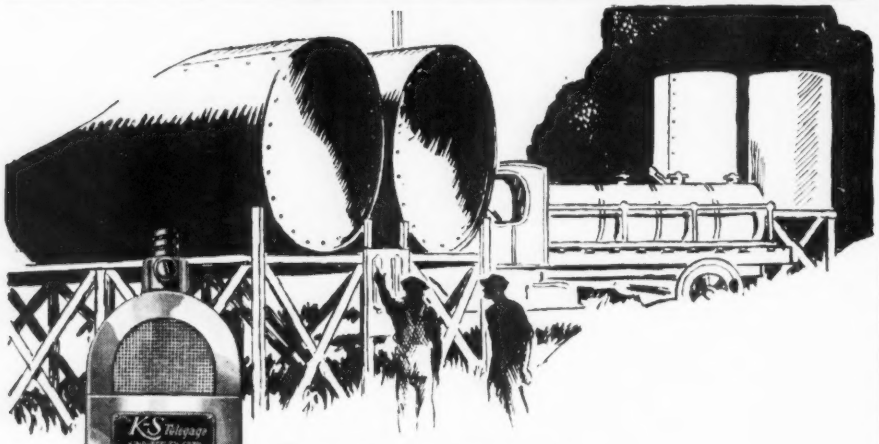
†Prices Nominal ††Only One Refiner Quoting *Quotations only **Represents Both Sales and Quotations

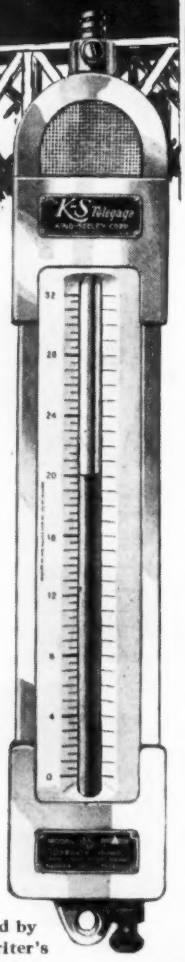
Barometer of Mid-Continent Refinery Market
Week Ending January 4

Charted Course of Prices, Production, Shipments, Stocks of Principal Refined Products, Week by Week, From Reports Made by 81 Plants to National Petroleum News


Millions of Gallons
Price In Cents Per Gallon
Stocks of Stove Distillate at Mid-Continent Refineries
Price of 38-40 Straw Distillate (Group 3) See Scale at Right
Shipments
Production
Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June July Aug. Sept. Oct. Nov. Dec.
1927
1928
Millions of Gallons
Price In Cents Per Gallon
Stocks of Gas Oil at Mid-Continent Refineries
Price of 32-36 Gas Oil (Group 3) See Scale at Right
Production
Shipments
Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June July Aug. Sept. Oct. Nov. Dec.
1927
1928
Millions of Gallons
Price In Cents Per Barrel
Price of 24-26 Fuel Oil (Group 3) See Scale at Right
Stocks of Fuel Oil at Mid-Continent Refineries
Shipments
Production
Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June July Aug. Sept. Oct. Nov. Dec.
1927
1928







Products that Pass from Tank to Tank Need the Greatest Protection

NO business man has a more practical use for the K-S Telegage than the distributor of petroleum products. "Delivery leaks" and wastage are too often the penalty of frequent handling, rush calls for fast shipment, and the repeated transfer of large quantities of liquid stock. The crying need for protection against these losses—for an instrument that places control in one central position—is completely fulfilled by the Telegage.

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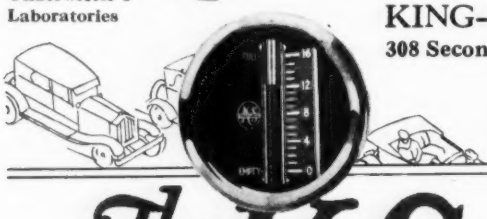


The K-S Telegage

BE CERTAIN WITH THE *K-S TELEGAGE*

Standard factory equipment on three-fourths of all cars selling for $700 or more.

Pennsylvania Market

Conditions Unchanged

CLEVELAND, Jan. 7.—While western Pennsylvania refiners were perturbed over another advance in Pennsylvania crude oil Jan. 4 there has been no reaction as yet in spot market prices. Cylinder and bright stocks were active last week and today; other commodities were relatively quiet.

Market conditions on the whole were reported as good until the crude advance was announced Friday when buying slackened.

Cylinder stocks continued to be scarce and considerable shopping was necessary to buy on the spot market. The 600 steam refined stock was quoted today at 25 to 26.50 cents. Light bright stock was quoted at 41 to 43 cents.

Quotations on other commodities were unchanged generally. U. S. Motor gasoline was 10.25 to 10.50 cents, 45 water white kerosene was 7.25 to 7.625 cents.

Gasoline stocks were reported in good shape compared with a year ago. For instance, one Titusville refiner said his stocks were a half of those for early 1928.

A cold wave and blizzard swept western Pennsylvania over the week end.

Wax Market

Prices Lower

NEW YORK, Jan. 5.—An easier tone was noted in export wax markets the past week. Prices of all grades of scale and fully refined wax were off approximately 0.125-cent a pound. Foreign demand, which had been expected to pick up following the turn of the new year, has been very disappointing, according to reports from most of the trade.

The trade seemed only slightly disturbed about the large addition to stocks in November as shown in the Bureau of Mines report issued this week. The market has been minus a period of real active buying since the latter part of August and so the 12,000,000-pound increase in stocks was more or less expected.

White crude scale sold in several instances at 5 cents a pound this week, which represents a 0.25-cent drop in the market. Goods was freely available from resale agents at this price at the close of the week, but refiners were asking 5.125 cents and higher.

Fully refined, 125-127 A.m.p., sold at 5.75 cents this week but the supply of this grade was said to be rather limited.

California Refinery Market

Gasoline Prices Are Easier

Staff Special
LOS ANGELES, Jan. 4

EASING off of gasoline prices on the east coast, and especially at the gulf, was felt in California this week and as a result it was understood that U. S. Motor could be bought for export at 7.50 to 8 cents. It was reported one refiner offered one cargo at 7.50 cents. Most of the refiners prepared to fill export orders are holding to quotations of 8 to 8.50 cents, but in most instances of this kind they do not care to sell. Other grades of gasoline show a weakness in keeping with new prices for U. S. Motor.

There is a disposition to ease off slightly in prices asked for gasoline to out of state points where competition with other refining sections is keen. Most of the refiners are refusing to sell gasoline at less than 9 cents, regardless of where it goes.

Goods for shipments to points within the state can be secured at about 10 cents without tax, with most of the larger plants refusing to sell at this price. Asking prices range as high as 13.50 cents, without tax, delivered.

So far the retail gasoline price situation, which is still in a demoralized condition, has not had real effect on the tank car market.

The major refiners, owning and operating service stations, are subleasing these stations to former employes, until some predict that there will be very few company-owned and operated service stations in the state in another month or so.

The latest company to join in this movement is the Shell Co. It was announced late in the week that the Shell had concluded arrangements to turn over its stations in Los Angeles county, some 180 in number, to Van Fleet-Durkee Inc., which in turn will sublease the former Shell stations to former operators.

The change calls for the handling of Shell products 100 per cent at the stations. The first stations were taken over Jan. 2 and others will be turned over as fast as arrangements can be made for their operation under the new management.

The practice of leasing company-owned stations to former employes has been in effect for the past two years, especially by Associated Oil Co., Standard Oil Co., and Union Oil Co. Associated has few stations left under company operation in the state, and both Standard and Union have been turning more and more to the practice of subleasing. It is understood that the Pan American stations, taken over by Richfield Oil Co., will also be subleased to former operators.

Natural gasoline for spot movement continues strong with little available at less than 8.50 cents, and in some instances sellers are asking 9 cents in small lots. The production of this product is on the decline in nearly every field in the state except at Santa Fe Springs.

The refiners are using much natural gasoline for blending to make quick starting motor fuel for the winter. Natural gasoline is expected to hold up well throughout the spring, at least.

There is no change in fuel oil quotations, and apparently this product is moving in sufficient volume to partially satisfy the refiners. They ask 70 cents for export or bunkers, but tank car lots can be purchased at around 60 cents, with a few isolated sales having been made at 55 cents.

Other products are without change.

New York Retail Gasoline Prices Slashed

NEW YORK, Jan. 7.—Retail gasoline prices in New York city received a heavy blow Jan. 3 and 4 when two large Independent station operators reduced their postings from two to seven cents per gallon.

Municipal Service Stations, operating approximately 60 stations in greater New York, reduced its price for regular U. S. Motor grade from 18 to 15 cents, and Super-X, the company's premium grade, was cut from 21 cents to 19 cents.

Warner-Quinlan Co., controlling about the same number of stations in the metropolitan district, eliminated its regular grade of U. S. Motor gasoline which it had been selling at 18 cents, and posted a price of 14 cents for Mileage-Plus, its premium grade, which had been selling at 21 cents.

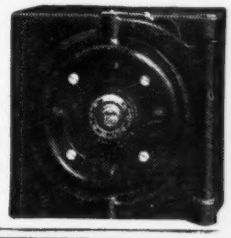
Wholesale prices were reported to be unaffected by the cut in retail prices.

Cash that can be stolen is a magnet!

It draws the burglar and hold-up man just as irresistibly as the loadstone draws steel filings.
The York Burglary Chest—the result of nearly half a century in expert safe construction—will bring to your service station the protection needed.

YORK SAFES

YORK SAFE *and* LOCK COMPANY
York, Pa.



Clean more often
—repaint less

STORAGE tanks can be kept clean and bright, and will need repainting much less frequently if periodically cleaned the Oakite way.

A solution of an Oakite material in water sprayed on or applied with brushes speedily removes all dirt, grime and oily deposits leaving surfaces amazingly fresh and new looking. No fumes—no danger—no fire hazard. Equally effective for cleaning insides of tanks, and for many other jobs.

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Oakite Service Men, cleaning specialists, are located in leading industrial centers of U. S. and Canada.

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OAKITE
Industrial Cleaning Materials and Methods

New York Domestic Market

Cold Strengthens Burning Oils

Staff Special
NEW YORK, Jan. 5

NEAR zero weather which spread over the northern part of the eastern seaboard toward the end of this week stimulated demand for domestic burning oils. Gasoline tank car markets in virtually all seaboard districts were featureless and prices were without material change.

Spring-like weather has prevailed since a week or two before the holidays and return of winter temperatures came out of a clear sky and caught a good many small distributors with relatively low stocks of burning oil. A more spirited demand for spot shipment resulted and the trade generally reported heavy movement against contracts. Distress offerings which have been numerous recently were snapped up quickly and the market assumed a much brighter aspect as the week ended.

Of outstanding interest to the eastern trade was the retail gasoline price war waging among Independent service station operators in New York City this week.

A good many of the trade were inclined to believe it was but a forerunner of general reductions in retail prices and that tank wagon markets in New York state were likely to be affected. So far, prices in Greater New York only have been affected but one of the companies cutting prices distributes through something like 400 stations in New York and New Jersey, and it was believed only a matter of a short time before its entire distribution would be affected.

Utility Oil Corp. owning and operating Municipal Service Stations in New York and Brooklyn, of which there are approximately 60, on Wednesday reduced its posting for its ordinary grade of motor gasoline 3 cents to 15 cents and also reduced the price for its premium grade, "Super-X," from 21 to 19 cents.

Warner-Quinlan Co., operating about the same number of stations in the metropolitan area, met the reductions on Thursday but the day following the company announced it would eliminate its motor grade of gasoline and post a price of 14 cents for "Mileage-Plus," its premium grade. This represented a drop of 7 cents in the price of its premium grade.

The action of these two companies had not become generally known among the trade up to the close of business Saturday, but several observers were forecasting general reductions when the news finally did spread.

Spot demand for tank car lots of gasoline continued virtually at a standstill the past week with most companies reporting the bulk of their shipments going out under contract.

For spot shipment U. S. Motor was quoted at 10.50 cents in New York harbor and sellers reported there was little quibbling on the part of jobbers about paying this price when forced to buy in the open market. In other words, the shading of prices which had become rather frequent before quotations were dropped from 11 cents to 10.50 cents, was lacking. New York harbor sellers of California U. S. Motor gasoline were asking 10.75 cents.

Philadelphia and Baltimore prices were generally unchanged. All sellers of both U. S. Motor and California grade in the former market were quoting 10.50 cents. One seller in the Baltimore market was asking 10.75 cents for California gasoline.

Spot market prices in New England districts remained purely figureheads. The majority of jobbers here were buying on the "contract market" at 12 cents delivered against a minimum of 12.25 cents, delivered, quoted by the majority of sellers for spot shipment in the open market.

Kerosene was a shade easier in spite of the colder weather, although no price reductions were made during the week. There were reports that water white kerosene could be purchased at 8.50 cents in New York harbor but these were unconfirmed. One seller in the Philadelphia district quoted 8.50 cents for water white kerosene, but all others were asking 9 cents.

Gulf Export Market

Foreigners Await Lower Prices

Staff Special
NEW YORK, Jan. 5

GULF export markets passed a relatively quiet week, with but one light oil transaction having been closed. Inquiries covering a considerable volume of goods made their appearance off and on throughout the week, but with the trend toward lower prices for gasoline as obvious as it is, buyers have shown little inclination to sign on the dotted line. Inquiries of a definite nature were withdrawn or postponed following the further recessions in gasoline prices recorded Friday.

Interest this week centered largely around the purchase made by a small Independent French buyer Friday. It consisted of approximately 16,000 barrels of U. S. Motor gasoline and 33,000 barrels of 64-66, 375 end point gasoline. The prices obtained, after much firm-offering back and forth, were 8 cents for the former commodity and 9.9375 cents for the latter, and represent reductions of 0.25-cent and 0.0625-cent, respectively from prices paid last week. The cargo is for Jan. 15-Feb. 15 loading at the Gulf and was taken by a leading Independent supplier.

Opinion was divided among the trade, following the closing of this business, as to the prospect for prices in the immediate future. Several suppliers were of the opinion that the market has not yet reached bottom and wouldn't be surprised to see prices drop another 0.5-cent before turning upward in response to spring buying. Others, surprised that prices have gone as low as they have, believe that U. S. Motor will not sell under 8 cents and also doubt if this price will be duplicated.

Most important of the inquiries postponed following the closing of the aforementioned business was one from a French buyer for approximately 72,000 barrels of U. S. Motor and 64-66, 375 end point gasoline, prime white and water white kerosene.

The first signs of weakness in the kerosene market were uncovered in the negotiation of this inquiry. Three large suppliers reported lowering their prices 0.125-cent to 7.625 cents for water white and 6.625 cents for prime white. Suppliers had held their quotations for kerosene firm at 0.125-cent higher for over two months.

The buyer of this cargo designated February loading when first entering his inquiry and the trade generally was of the opinion that it would be only a matter of a few days before it would be reinstated.

Foreign demand for gas oil continued slow the past week but domestic buyers were relatively active.

A leading broker in New York reported negotiating four cargoes of gas oil in the past 10 days for domestic shipment at a price of 3.875 cents in each instance. The material in each cargo was 32 plus gravity, translucent. Dark gas oil of lower gravity was reported available at 0.125 cent less.

Heavy oil prices were generally unchanged. Cargoes of Grade C bunker oil continued to be reported available at $0.65 a barrel in one or two directions with the majority of suppliers asking $0.68 a barrel and up. For bunkering purposes, Grade C was quoted at $0.875 a barrel in the New Orleans district and $0.95 a barrel further west in the Gulf.

Lubes Quiet in Gulf Coast

HOUSTON, Jan. 5.—The new year found Gulf Coastal lubricant markets quiet and prices unchanged from a week ago. Manufacturers predict continuance of present status of market for a month or six weeks, basing their belief on earlier contract sales and the fact that the time is not at hand for new large-scale commitments.

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"WHIRLWIND" No. 273,879. Motor Fuel Products Co., Laredo, Texas. For gasoline.

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"LIGHT HOUSE" No. 271,985. The Pure Oil Company, Chicago, Ill. For fuel oils and lubricating oils and greases, and kerosene.

"J. R. WATKINS" No. 274,027. The J. R. Watkins Co., Winona, Minn. For sewing machine oil and lubricating oil.

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Complete Seaboard Market

(Export markets for whole year given in OIL PRICE HANDBOOK. Each volume carries refinery, tank wagon, crude and export markets—complete for the whole year)

Eastern Domestic Market

(Prices for tank car lots, f. o. b. refinery or seaboard terminal, representing majority of quotations.)

U. S. MOTOR GASOLINE	Jan. 7	Dec. 31	Dec. 24
New York harbor	10.50	10.50	10.75 –11.00
Portland district	*12.75	**12.75–13.25	*13.25
Boston district	*12.25	**12.25–12.75	*12.75
Providence district	*12.25	**12.25–12.75	*12.75
Philadelphia district	10.50	10.50	†11.00
Baltimore district	10.50	10.50	11.00
Norfolk district	10.50	10.50	11.00
Charleston district	10.50	10.50	11.00
Savannah district	9.75 –10.50	9.75 –10.50	11.00
Jacksonville district	9.75 –10.50	9.75 –10.50	11.00
CALIFORNIA U. S. MOTOR GASOLINE			
New York harbor	10.75	10.75	11.00
Philadelphia district	10.50	10.50	†11.00
Baltimore district	10.50 –10.75	10.50 –10.75	11.00
WATER WHITE KEROSENE			
New York harbor	9.00	9.00	9.00
Philadelphia district	8.50 – 9.00	8.50 – 9.00	9.00
Baltimore district	9.00	9.00	9.00
GAS OIL: 28-34 Gravity			
New York harbor	4.75 – 5.00	4.75 – 5.00	4.75 – 5.00
Boston district	4.50 – 5.00	4.50 – 5.00	4.50 – 5.00
FURNACE OIL: 36-40 Gravity			
New York harbor	6.50	6.50	6.50
Boston district	6.00 – 6.50	6.00 – 6.50	6.00 – 6.50
GRADE C BUNKER OIL			
New York harbor	$1.05	$1.05	$1.05
Boston district	$1.05	$1.05	$1.05
DIESEL OIL			
New York harbor	$2.00	$2.00	$2.00
MEDICINAL OILS, RUSSIAN			
885-890 s.g., 325-330 vis.	$0.80 – 0.90	$0.80 – 0.90	$0.80 – 0.90
870-875 s.g., 150-155 vis.	$0.67 – 0.77	$0.67 – 0.77	$0.67 – 0.77
860-865 s.g., 80-85 vis.	$0.65 – 0.75	$0.65 – 0.75	$0.65 – 0.75

Note: Above gasoline prices do not include inspection tax levied in some states.

*Minimum delivered. **Delivered prices.

†Two sellers quote 10.75c for shipment to Pittsburgh and other Western Pennsylvania points.

New York Export Market

(Gasoline and kerosene in cases in bulk. Lubricating oils are per gal. in bbls. Cylinder oils are Penna. products)

	Jan. 7	Dec. 31	Dec. 24
U. S. Motor gasoline	26.40	26.40	26.40
43-45 150 w.w. kerosene	18.90	18.90	18.90
42-44 110 s.w. kerosene	17.65	17.65	17.65
CYLINDER OILS			
Bright stock, dark	48.00 –49.00	44.00 –45.00	42.50 –44.00
600 D filtered	40.00	38.00	38.00
600 Warren E filtered	37.00	37.00	33.00 –35.00
600 s.r. unfiltered	32.50 –33.00	32.00 –33.00	28.00 –31.00
650 s.r. unfiltered	38.00 –39.50	38.00	33.00 –35.00
600 flash, s.r.	41.00 –42.00	41.00	36.00 –38.00
630 flash, s.r.	49.00 –50.00	48.00 –50.00	47.00 –48.00
RED ENGINE OILS (Vis. 100°)			
300 vis. No. 6½ color	20.00	20.00	20.00
250 vis. No. 6 color	19.50	19.50	19.50
200 vis. No. 6 color	18.00	18.00	18.00
PALE ENGINE OILS (Vis. 100°)			
230 vis. No. 3¾ color	23.50	23.50	23.50
180 vis. No. 3¼ color	19.00	19.00	19.00
100 vis. No. 2¼ color	16.00	16.00	16.00
MOTOR OILS (Vis. 100°)			
600 vis No. 7 color	33.00	33.00	33.00
500 vis. No. 6½ color	31.00	31.00	31.00
400 vis. No. 7¼ color	30.00	30.00	30.00
300 vis. No. 6 color	29.00	29.00	29.00
200 vis. No. 6 color	28.00	28.00	28.00
MEDICINAL OILS			
875-885 s.g.	$0.80	$0.80	$0.80
865-870 s.g.	$0.70	$0.70	$0.70
WAXES (In cents per pound, f.a.s. carload lots)			
WHITE CRUDE SCALE (In barrels)			
122-124 A.m.p.	5.00 – 5.25	5.25	5.25
124-126 A.m.p.	5.00 – 5.25	5.25	5.25
FULLY REFINED (In burlap bags)			
123-125 A.m.p. Phila.	5.625– 5.75	5.75	5.75
125-127 A.m.p.	5.75 – 6.00	5.875– 6.00	5.875– 6.00
128-130 A.m.p.	6.00 – 6.25	6.25 – 6.375	6.25 – 6.375
130-132 A.m.p.	6.50	6.50 – 6.75	6.50 – 6.75
133-135 A.m.p.	7.25	7.25	7.25
135-137 A.m.p.	7.75	7.75	7.75
YELLOW CRUDE SCALE			
124-126 A.m.p.	4.875	5.00	5.00 – 5.125

Gulf Export Market

(Prices are f. o. b. Gulf oil terminals in Texas and Louisiana, shipments of 20,000 bbls. and over unless otherwise noted, representing sellers' opinions, except those prices specified to the contrary)

GASOLINE	Jan. 7	Dec. 31	Dec. 24
U. S. Motor	8.00	8.25	8.75
60-62 400 e.p.	9.50	9.50	10.125–10.25
61-63, 390 e.p.	9.75	9.75	10.375–10.50
64-66, 375 e.p.	10.00	10.00	10.625–10.75
U. S. Motor, cases (cargoes)	$1.70	$1.75	$1.80
64-66, cases (cargoes)	$1.90	$1.90	$1.95
KEROSENE			
44 water white	7.625	7.75	7.75
41-43 prime white	6.625	6.75	6.75
Water white, cases (cargoes)	$1.65	$1.65	$1.65
Prime white, cases (cargoes)	$1.55	$1.55	$1.55
DOMESTIC GAS & BUNKER OILS			
*26-30 translucent gas oil	3.75 – 3.875	3.75 – 3.875	3.75 – 3.875
*30-32 translucent gas oil	3.875	3.875	3.875
Grade C bunker oil	$0.875–$0.95	$0.875–$0.95	$0.875–$0.95
Grade C bunker oil, cargoes	$0.65 –$0.70	$0.65 –$0.70	$0.65 –$0.70

*Less than ½ of 1% sulfur.

MEXICAN CRUDE AND BUNKER OILS (F. O. B. Steamer, Tampico)			
Heavy Panuco crude taxes to be paid	$0.88 –$0.95	$0.88 –$0.95	$0.88 –$0.95
Grade C bunker oil, for bunkering purposes, taxes paid	$1.05	$1.05	$1.05

SOUTH TEXAS LUBRICATING OILS (Viscosity at 100° F.: cold test 0) (Tanker, f.o.b. Houston)			
100 vis. No. 2 unfiltered pale	6.50	6.50	6.50
200 vis. No. 3 unfiltered pale	8.50 – 9.50	8.50 – 9.50	8.50 – 9.50
300 vis. No. 3 unfiltered pale	9.50 –10.50	9.25 –10.50	9.25 –10.50
500 vis. No. 3½ unfiltered pale	11.00 –12.00	11.00 –12.00	11.00 –12.00
750 vis. No. 4 unfiltered pale	13.00 –13.25	12.50 –13.25	12.50 –13.25
1200 vis. No. 5 unfiltered pale	16.00 –17.00	16.00 –17.00	16.00 –17.00
200 vis. No. 5-6 red oil	7.50 – 8.50	7.50 – 8.50	7.50 – 8.50
300 vis. No. 5-6 red oil	8.75 – 9.25	8.75 – 9.25	8.75 – 9.25
500 vis. No. 5-6 red oil	10.00 –10.50	10.00 –10.50	10.00 –10.50
750 vis. No. 5-6 red oil	11.50 –12.00	11.50 –12.00	11.50 –12.00
1200 vis. No. 5-6 red oil	15.00 –16.50	15.00 –16.50	15.00 –16.50

Pacific Export Market

(Quotations are at seaboard, Los Angeles, in cargo lots, cents per gallon, except where otherwise noted.)

	Jan. 7	Dec. 31	Dec. 24
Gasoline, U. S. Motor, 53-55 Gravity	7.50 – 8.00	8.00 – 8.25	8.00 – 8.25
Gasoline, U. S. Motor, blends and special cuts	8.25 –10.00	8.50 –10.25	8.50 –10.25
Gas Oil, 30-34, per barrel	$1.05 –$1.15	$1.05 –$1.15	$1.05 –$1.15
Diesel Oil, 27 plus, per barrel	$0.95 –$1.10	$0.95 –$1.10	$0.95 –$1.10
Bunker oil, 14-18, per barrel	$0.70 –$1.00	$0.70 –$1.00	$0.70 –$1.00
Fuel oil, 14-18 per barrel	$0.70 –$1.00	$0.70 –$1.00	$0.70 –$1.00
Kerosene, 38-40 w.w., 125-150 flash, per gal.	5.50 – 6.25	5.50 – 6.25	5.50 – 6.25
Cased Goods			
Gasoline, U. S. Motor	$1.75 –$1.85	$1.75 –$1.85	$1.75 –$1.85
Kerosene, 38-40 w.w., 125-150 flash	$1.45 –$1.50	$1.45 –$1.50	$1.45 –$1.50

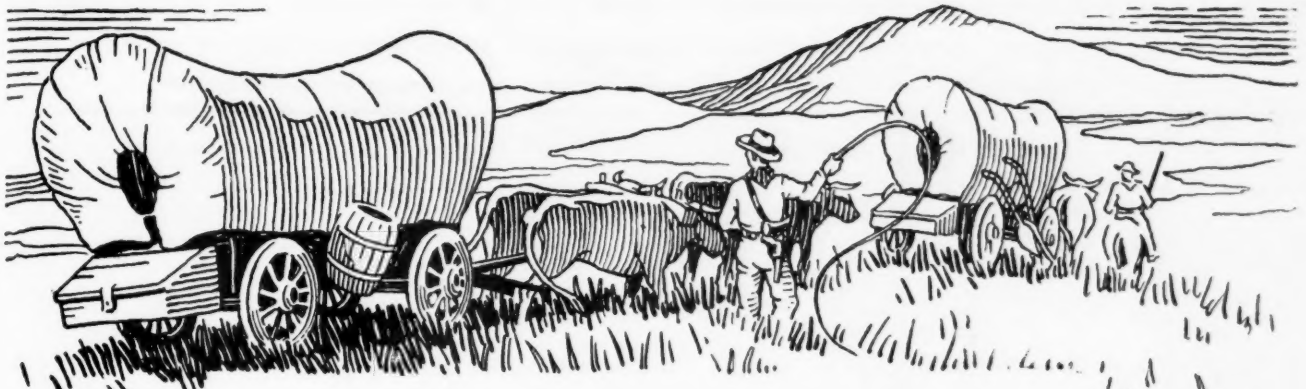
Tanker Rates

(Approximate tanker freight rates to Continental ports, in shillings per ton of 2240 pounds, British sterling; to American ports, cents per barrel.)

	Jan. 7	
	Crude &/or Fuel	Refined Oil
Calif. to U. K. or Continental ports*	23	22–23
Gulf to U. K. or Continental ports*	13	12–13
North Atlantic to U. K. or Continental ports*	11/6	11
Calif. to North Atlantic ports (not E. of N. Y.)	50–55c	65c
Gulf and North Atlantic ports (not E. of N. Y.)**	16	20–25c

*Continental ports in the range between Bordeaux and Hamburg, both inclusive.

**For Venezuela loading 1c per bbl. additional. For Tampico loading 4c per bbl. additional.



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Tank Wagon, Service Station Markets for Gasoline and Kerosene

(OIL PRICE HANDBOOK has t. w. and s. s. markets for the whole year, arranged for quick reference)

These Prices in Effect January 7, 1929, as Posted by Principal Marketing Companies

S.O. NEW JERSEY TERRITORY

	Gasoline T.W.	Tax	Total T.W.	S.S.	Oil T.W.
Atlantic City, N. J.	15	2	17	20	13
Newark, N. J.	15	2	17	20	13
Annapolis, Md.	15	4	19	22	13
Baltimore, Md.	15	4	19	22	13
Cumberland, Md.	15	4	19	22	13
Washington, D. C.	15	2	17	20	13
Danville, Va.	15	5	20	23	13
Norfolk, Va.	15	5	20	23	13
Richmond, Va.	15	5	20	23	13
Roanoke, Va.	15	5	20	23	13
Petersburg, Va.	15	5	20	23	13
Charleston, W. Va.	15	4	19	22	13
Keyser, W. Va.	15	4	19	22	13
Parkersburg, W. Va.	15	4	19	22	13
Wheeling, W. Va.	15	4	19	22	13
Charlotte, N. C.	15	4	19	22	13
Hickory, N. C.	15	4	19	22	13
Mt. Airy, N. C.	15	4	19	22	13
Salisbury, N. C.	15	4	19	22	13
Charleston, S. C.	15	5	20	23	13
Columbia S. C.	15	5	20	23	13

CONTINENTAL OIL

Denver, Colo.	14	3	17	20	14.5
Pueblo, Colo.	16	3	19	22	14.5
Grand Junc., Colo.	19.5	3	22.5	25.5	18
Casper, Wyo.	16	3	19	22	13
Cheyenne, Wyo.	17	3	20	23	14.5
Butte, Mont.	20.5	3	23.5	26.5	19
Helena, Mont.	20.5	3	23.5	26.5	19
Salt Lake City, Utah	18.5	3½	22	25	17
Boise, Ida.	20.5	4	24.5	27.5	19
Twin Falls, Ida.	20.5	4	24.5	27.5	19
Albuquerque, N. M.	17	5	22	25	17

S. O. CALIFORNIA

Phoenix, Ariz.	12	4	16	20	21.5
Los Angeles, Cal.	13.5	3	16.5	20.5	15.5
Fresno, Cal.	14	3	17	21	16.5
San Francisco, Cal.	14	3	17	21	15.5
Reno, Nev.	18	4	22	26	19
Portland, Ore.	14.5	3	17.5	21.5	16.5
Seattle, Wash.	14.5	2	16.5	20.5	16.5
Spokane, Wash.	18.5	2	20.5	24.5	20.5
Tacoma, Wash.	14.5	2	16.5	20.5	16.5

S. O. LOUISIANA

Little Rock, Ark.	14	5	19	22	13
Alexandria, La.	13	4	17	20	†16
Baton Rouge, La.	12	4	16	19	†14.5
Lake Charles, La.	13.5	4	17.5	20.5	†16
New Orleans, La.	*13.5	4	*17.5	*20.5	†16
Shreveport, La.	13.5	4	17.5	20.5	†15
Lafayette, La.	13	4	17	20	†15.5
Bristol, Tenn.	16	3	19	22	15
Chattanooga, Tenn.	15.5	3	18.5	21.5	16
Knoxville, Tenn.	16	3	19	22	16
Nashville, Tenn.	15	3	18	21	16
Memphis, Tenn.	14	3	17	20	12.5

*New Orleans gasoline prices include 1c parish tax in addition to 2c state tax, and kerosene prices include 1c state tax and 1c parish tax.

†Kerosene price in Louisiana includes 1c state tax.

S. O. KENTUCKY

Ashland, Ky.	17	5	22	24	15.5
Catlettsburg, Ky.	17	5	22	24	15.5
Lexington, Ky.	16	5	21	22	15.5
Louisville, Ky.	16	5	21	23	15
Covington, Ky.	17	5	22	22	15.5
Clarksdale, Miss.	18	4	22	24	13
Gulfport, Miss.††	19.5	4	23.5	25.5	14
Jackson, Miss.	16	4	20	22	14.5
Natchez, Miss.	17.5	4	21.5	23.5	14
Vicksburg, Miss.	17.5	4	21.5	23.5	14
Birmingham, Ala.	18	4	22	24	16
Mobile, Ala.‡	18	4	22	24	15
Montgomery, Ala.*	16	4	20	21	16.5
Atlanta, Ga.	18	4	22	24	†16.5
Augusta, Ga.	18	4	22	24	†15.5
Macon, Ga.	18	4	22	22	†16.5
Savannah, Ga.	17	4	21	23	†15.5
Jacksonville, Fla.	18	5	23	25	14.5
Miami, Fla.	19	5	24	26	15.5
Tampa, Fla.	18	5	23	25	14.5
Pensacola, Fla.**	19	5	24	26	14.5

*Local privilege tax of 1 cent on gasoline and ½ cent on kerosene at Montgomery included. ‡Mobile gasoline prices include 1c city tax.

†Georgia kerosene prices include 1c state tax.

**Both tank wagon prices include 1c city tax at Pensacola, which went into effect Oct. 15, 1926.

††Both tank wagon prices at Gulfport include Harrison county privilege tax of 2c.

Latest Changes In Tank Wagon Prices

Gasoline Changes

S. O. Louisiana—T.w. and s.s. prices gasoline up 2c, Louisiana, due to tax increase of that amount at noon, Jan. 4. Total gasoline tax is 4c.

Correction: Gasoline prices at Little Rock have been in error since Dec. 5 issue. Correct prices should have been 19c t.w. and 22c s.s., including 5c tax. There has been no change since Nov. 26.

Kerosene Changes

S. O. Louisiana—Correction: 14c t.w. price at Little Rock has been in error. It should have been 13c since Nov. 27 when it was cut 1c.

S. O. NEBRASKA

	Gasoline T.W.	Tax	Total T.W.	S.S.	Oil T.W.
Omaha, Neb.	15.25	2	17.25	19.25	12.25
McCook	16.75	2	18.75	20.75	13.75
Norfolk	15.75	2	17.75	19.75	12.75
North Platte	16.75	2	18.75	20.50	13.50
Scottsbluff	16.75	2	18.75	20.75	13.25

S. O. INDIANA

Chicago, Ill.	15	0	15	16	12
Decatur, Ill.	15.2	0	15.2	15	12.1
E. St. Louis, Ill.	14.4	0	14.4	16.4	11.2
Joliet, Ill.	15.4	0	15.4	17.4	12.3
Peoria, Ill.	15.2	0	15.2	14	12.1
Quincy, Ill.	15.2	0	15.2	17.2	11.9
Indianapolis, Ind.	15.2	3	18.2	18.2	13.2
Evansville, Ind.	15	3	18	20	13
South Bend, Ind.	15.4	3	18.4	20.4	13.4
Detroit, Mich.	15.8	3	18.8	20.8	13.7
Grand Rapids, Mich.	15.7	3	18.7	20.7	13.6
Saginaw, Mich.	15.9	3	18.9	20.9	13.8
Green Bay, Wis.	15.6	2	17.6	19.6	12.4
Madison, Wis.	15.3	2	17.3	19.3	12.1
Milwaukee, Wis.	15.1	2	17.1	19.1	11.9
La Cross, Wis.	16.2	2	18.2	20.2	13
Minneapolis, Minn.	16.2	2	18.2	20.2	12.9
Duluth, Minn.	16.5	2	18.5	20.5	12.9
Mankato, Minn.	16.1	2	18.1	20.1	12.7
Des Moines, Ia.	15.5	3	18.5	18.5	12.3
Davenport, Ia.	15.5	3	18.5	20.5	12.3
Sioux City, Ia.	15.1	3	18.1	20.1	11.9
Mason City, Ia.	15.5	3	18.5	20.5	12.3
St. Louis, Mo.	*14.9	2	16.9	16.9	11.3
Kansas City, Mo.	†15.9	2	17.9	17.9	10.6
St. Joseph, Mo.	†15.5	2	17.5	17.5	11.2
Fargo, N. D.	17.9	2	19.9	21.9	14.9
Grand Forks, N. D.	18.2	2	20.2	22.2	15.2
Minot, N. D.	17.9	2	19.9	21.9	14.9
Pierre, S. D.	16	4	20	22	13.4
Huron, S. D.	16.3	4	20.3	22.3	13.7
Wichita Kans.	13.8	2	15.8	17.8	10.8
Bartlesville, Okla.	13.5	3	16.5	18.5	10.5

S. O. Indiana's quantity contract price schedule on tank truck deliveries of gasoline, figured from the service station price, is 2c for 500 gals. or more a month; 2½c for 2000 gals. or more a month and 3c for 6000 gals. or more a month.

*Includes city tax of ½c.

†Includes city tax of 1c.

S. O. OHIO

All Ohio points	*16	3	*1	20	12

*S. O. Ohio recognizes a maximum discount to dealers of 3c per gal. under its service station price of gasoline. Government agencies and public utility users are allowed 2c off the service station price.

MAGNOLIA PETROLEUM

	Gasoline T.W	Tax	Total T.W.	S.S.	Oil T.W.
Muskogee, Okla.	15	3	18	20	12
Oklahoma City.	15	3	18	20	12
Tulsa, Okla.	14	3	17	19	10
Fort Smith, Ark.*	15	†3	18	20	14
Little Rock, Ark.	16	5	21	23	14
Texarkana, Ark.*	14.5	*2	16.5	20.5	13
Dallas, Tex.	14	2	16	20	12
Fort Worth, Tex.	14	2	16	19	12
Houston, Tex.	14	2	16	20	15
San Antonio, Tex.	12	2	14	17	11
El Paso, Tex.	15	2	17	20	16

*Within city of Texarkana, the state tax on gasoline is 2c per gal. conforming with the Texas state tax. In this district outside of the city the 5c Arkansas tax applies.

†Within city of Fort Smith, Oklahoma tax of 3c applies. In this district outside of the city, the 5c Arkansas tax applies.

S. O. NEW YORK

Due to local price conditions at many points in S. O. New York territory, acutal prices on both gasoline and kerosene are being made at under the posted tank wagon prices published below.

New York City.	18	0	18	*20	15
Albany, N. Y.	18	0	18	21	15
Buffalo, N. Y.	18	0	18	20	14
Rochester, N. Y.	18	0	18	20	13
Syracuse, N. Y.	18	0	18	20	13
Boston, Mass.	17	2	19	20	15
Augusta, Me.	17	4	21	22	15
Manchester, N. H.	17	4	21	22	15
Burlington, Vt.	17	3	20	21	15

*The Standard of New York does not operate stations in New York City. This figure is the retail price of a principal station operator in New York, selling Socony gasoline.

ATLANTIC REFINING

Pittsburgh, Pa.	†16	*	†16	*20	14
Philadelphia, Pa.	†16	*	†16	*20	14
Allentown, Pa.	†16	*	†16	*20	14
Erie, Pa.	†16	*	†16	*20	14
Scranton, Pa.	†16	*	†16	*20	14
Altoona, Pa.	†16	*	†16	*20	14
Dover, Del.	†16	3	†19	20	14
Wilmington, Del.	†16	3	†19	20	14
Boston, Mass.	17	2	19	20	15
Springfield, Mass.	17	2	19	20	15
Worcester, Mass.	17	2	19	20	15
Providence, R. I.	17	2	19	20	15
Hartford, Conn.	17	2	19	20	14
New Haven, Conn.	17	2	19	20	15

*3-cent state tax is collected by retail dealer and paid by him directly to state.

†The Atlantic Refg. Co. recognizes a 2c a gal. discount from its posted tank wagon market for dealers for resale.

For commercial accounts under definite contract for a year's supply, the company recognizes a discount of 1c below t.w. market where contract calls for between 5,000 and 10,000 gals. a year, and 2c where contract calls for deliveries above 10,000 gals., where deliveries on the account are by tank wagon.

For such commercial accounts taking deliveries from service stations, the same discounts apply but are figured from the posted service station price.

V. M. & P. NAPHTHA

(Changes ordinarily occur coincident with gasoline price changes)

	Oleum Spirits	V.M.&P. Naphtha	Cleaner Naphtha
Chicago	14.7	16.2	18
Detroit	16.4	17.9	19.7
Kansas City	†14.9	†16.4	†18.2
Milwaukee	15.4	*18.9	*20.7
Minneapolis	*18.7	*20.2	*22
St. Louis	14.6	16.1	17.9
New York		20	23
Boston		20	23

PETROLEUM SPIRITS

(Solvent)

Tank Cars	
New York refineries	12.50-13
Boston refineries	12.50-13
Philadelphia refineries	12.50-13
Tank Wagons or Steel Barrels	
New York	20
Massachusets	20
New Jersey	19
Pennsylvania	18

*Includes 2c state tax. †Includes 1c city tax.

Above prices include these inspection fees on both gasoline and kerosene, per gallon: Alabama, 1/40c on gasoline, 1/2c kerosene; Arkansas, 1/20c on both; Colorado, 1/10c on both; Florida, 1/8c on both; Indiana, 2/25c on both; Kansas, 1/50c on both; Louisiana, 1/32c on gasoline, 1c on kerosene; Minnesota, 3/50c on both; Missouri, 1/50c on both; Nebraska, 3/50c to 1/2c on both; North Carolina, 1/4c on both; North Dakota, 1/20c on both; Oklahoma, 1/25c on both; South Carolina, 1/8c on both; South Dakota, 1/10c on both; Tennessee, 2/5c on gasoline and 1/2c on kerosene; Wisconsin, 3/50c on both.

Kerosene inspection fees only: Iowa, 13/100c; Michigan, 1/5c to 4/5c per gal.

In Illinois, cities and villages have the power to appoint oil inspectors and fix inspection fees which is done in some instances. In some cases in the above states or other states there are local inspection fees.

Tank Wagon, Service Station Markets for Gasoline and Kerosene

CANADA

Prices in Effect January 7, 1929

(Per Imperial Gallon, which is 1.2 American Gallons)

	Gasoline				Oil
	T.W.	Tax	T.W.	S.S.	T.W.
ONTARIO					
Toronto	20.5	3	23.5	27	22
Ottawa	20.5	3	23.5	27	22
Cochrane	25.5	3	28.5	..	27
Ft. William	23.5	3	26.5	30	23.5
MANITOBA					
Winnipeg	22.5	3	25.5	29	22.5
SASKATCHEWAN					
Regina	27	3	30	34	27
ALBERTA					
Edmonton	27.5	3	30.5	34	27.5
Calgary	23.5	3	26.5	30	23.5
BRITISH COLUMBIA					
Vancouver	22	3	25	29	23
QUEBEC					
Montreal	21.5	5	26.5	30	22
Quebec City	22.5	5	27.5	31	23
Three Rivers	22.5	5	27.5	31	23
NEW BRUNSWICK					
St. John	25	3	28	31.5	25
Moncton	25	3	28	31.5	25
NOVA SCOTIA					
Halifax	25	5	30	33.5	25
Sydney	25	5	30	33.5	25
PRINCE EDWARD ISLAND					
Charlottetown	25	5	30	33.5	25

Note: In districts surrounding these points 1c additional is added to city price.

Mid-West Oil, Compounder, Erecting Plant

KANSAS CITY, Jan. 7.—A compounding plant for lubricating oils and greases, which will have a storage capacity for 250,000 gallons of lube oils, is being erected by the Mid-West Oil Co., compounder and wholesaler.

The plant is being built on a site in the central industrial district and will be one of the most modern and complete plants in this territory.

The company was organized three years ago by Ernest P. Maurin and Julius P. Maurin, brothers. A complete line of Pennsylvania, Mid-Continent and Texas oils is marketed in Kansas, Missouri, Iowa, Nebraska and Colorado, according to E. P. Maurin.

"Gas" Tax Conference Puts Out Book

JEFFERSON CITY, Mo., Jan. 7.—A book has been published by the North American Gasoline Tax Conference, covering the proceedings of its third annual conference at Memphis, Tenn. on Oct. 1, 2 and 3, 1928. The book contains the final text of the model law approved by the Memphis conference. Price is $1.50 delivered, according to William A. McAtee, president. Headquarters are at Jefferson City.

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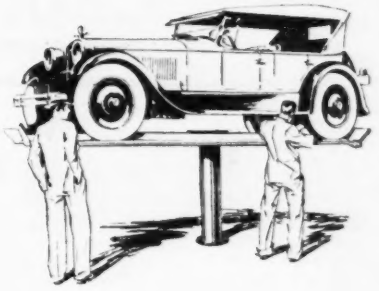

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Crude Oil Prices (in Effect Jan. 7)

(Crude prices for the whole year in OIL PRICE HANDBOOK published annually)

EASTERN FIELDS

(Posted by Joseph Seep Purchasing Agency)

Penna. Grade Oil in New York Transit Lines (Alleghany, N. Y. District)	$4.10
Bradford District Oil in National Transit Lines (Bradford District)	4.10
Penna. Grade Oil in National Transit Lines (Other Pennsylvania)	4.00
Penna. Grade Oil in Southwest Penna. Pipe Lines (Other Pennsylvania)	4.00
Penna. Grade Oil in Eureka Pipe Lines (West Virginia)	3.90
Penna. Grade Oil in Buckeye Pipe Lines (Macksburg, O. district)	3.85
Cabell Grade in Eureka Pipe Lines (West Virginia)	1.45
Corning Grade in Buckeye Pipe Lines (Ohio)	1.90
Corning, O., heavy grade	1.80
Somerset Oil in Cumberland Pipe Lines (Kentucky)	1.75
Ragland Grade in Cumberland Pipe Lines (Kentucky)	.95

(Posted by Stoll Oil Refining Co.)

Oil City, Ky., oil in Stoll lines	$1.75

CENTRAL STATES FIELDS

Posted by Ohio Oil Co.

Effective July 27, 1928

Wooster (Oct. 17)	*$1.77	Princeton	$1.55
Lima	1.60	Illinois	1.55
Waterloo	1.20	Plymouth	1.28
Indiana	1.37	West Kentucky	1.63

*Wooster crude run prior to Oct. 17, 1928 takes price of $1.67.

CANADIAN CRUDE

Posted by Imperial Oil Refineries, Ltd.

Petrolia	$2.00
Oil Springs	2.07

OKLAHOMA, KANSAS and NORTH TEXAS

Prices of Prairie Oil & Gas Co.

(In Oklahoma, Kansas, North and East Central Texas)

Effective July 26, 1928

Below 25	$0.60	35-35.9	$1.31
25-25.9	0.67	36-36.9	1.36
26-26.9	0.74	37-37.9	1.41
27-27.9	0.81	38-38.9	1.46
28-28.9	0.88	39-39.9	1.51
29-29.9	0.95	40-40.9	1.56
30-30.9	1.02	41-41.9	1.61
31-31.9	1.09	42-42.9	1.66
32-32.9	1.16	43-43.9	1.71
33-33.9	1.21	44 and above	1.76
34-34.9	1.26		

Humble Oil & Refining Co. Prices

(Ranger, North Texas, Mexia, Powell, Boggy Creek, Richland, Wortham, Lytton Springs, Currie, Moran and Nocona crudes all in Texas.)

July 26, same schedule as Prairie.

Mirando, Tex	$0.80

Magnolia Petroleum Co.

(In Oklahoma, Kansas and North and East Central Texas)

July 26, Magnolia posted in above fields and in Panola Co., same schedule as Prairie, except these grades posted Aug. 2:

Below 25	$0.60	27-29.9	$0.75
25-25.9	0.67	30-30.9	0.90
26-26.9	0.74	31-31.9	1.05
Glasscock, Crane, Upton, Winkler Counties			0.65
Chalkfield (Howard Co.)			0.80
Iatan district			0.93
Corsicana heavy			1.00

Carter Oil Co.

(Oklahoma and Kansas)

July 26, same schedule as Prairie except Carter does not post oil below 25.

PANHANDLE, TEXAS

Humble Oil & Refining Co.

Effective July 26, 1928

Hutchinson and Carson Counties:

Below 32	$0.69	38-38.9	$1.06
32-32.9	0.76	39-39.9	1.11
33-33.9	0.81	40-40.9	1.16
34-34.9	0.86	41-41.9	1.21
35-35.9	0.91	42-42.9	1.26
36-36.9	0.96	43-43.9	1.31
37-37.9	1.01	44 and above	1.36

Wheeler County:

Below 30	$0.65	37-37.9	$1.11
30-30.9	0.72	38-38.9	1.16
31-31.9	0.79	39-39.9	1.21
32-32.9	0.86	40-40.9	1.26
33-33.9	0.91	41-41.9	1.31
34-34.9	0.96	42-42.9	1.36
35-35.9	1.01	43-43.9	1.41
36-36.9	1.06	44 and above	1.46

Gray County:

Below 29	$0.68	37-37.9	$1.21
29-29.9	0.75	38-38.9	1.26
30-30.9	0.82	39-39.9	1.31
31-31.9	0.89	40-40.9	1.36
32-32.9	0.96	41-41.9	1.41
33-33.9	1.01	42-42.9	1.46
34-34.9	1.06	43-43.9	1.51
35-35.9	1.11	44 and above	1.56
36-36.9	1.16		

WEST TEXAS

Humble Oil & Refining Co.

Effective July 26, 1928

Winkler, Crane, Upton, Crockett, and Pecos Counties	$0.65

NORTH LOUISIANA—ARKANSAS FIELDS

Prices of Standard Oil Co. of Louisiana

Caddo, Homer, Haynesville, Bull Bayou, El Dorado, Crichton, De Soto and **Cotton Valley.

Effective Aug. 2, 1928

Below 28	$0.81	36-36.9	$1.36
28-28.9	0.88	37-37.9	1.41
29-29.9	0.95	38-38.9	1.46
30-30.9	1.02	39-39.9	1.51
31-31.9	1.09	40-40.9	1.56
32-32.9	1.16	41-41.9	1.61
33-33.9	1.21	42-42.9	1.66
34-34.9	1.26	43-43.9	1.71
35-35.9	1.31	44 and above	1.76

**Cotton Valley, below 36, $0.75. Beginning with 36-36.9, same schedule as above.

Smackover,	below 24	$0.75
do	24 and above	0.90
Bellevue		1.25
*Urania, La.		0.90
†East El Dorado		0.75

*Posted by Louisiana Oil Refining Corp.

†Posted by Magnolia Petroleum Co.

Smackover prices posted on Feb. 7 by S. O. La., Gulf, Shreveport-El Dorado Pipe Line, Atlantic Oil Producing Co. and The Texas Co.; on Feb. 8 by Magnolia; on Feb. 6 by La. Oil Refg. Corp.

Aug. 8 The Texas Co., same schedule in Louisiana as Standard, plus these grades: 24-24.9, $0.60; 25-25.9, $0.67; 26-26.9, $0.74; 27-27.9, $0.81.

Aug. 7 Magnolia Petroleum met Standard schedule in Louisiana-Arkansas fields.

STEPHENS, ARKANSAS

Louisiana Oil Refining Corp., and Atlantic Oil Producing Co.

Effective Aug. 2, 1928

Below 28	$0.75	30-30.9	$0.87
28-28.9	0.79	31-31.9	0.91
29-29.9	0.84	32 and above	0.95

GULF COASTAL

Posted by Humble Oil & Refining Co.

Effective March 14, 1927

Grades A	$1.20	29-29.9	$1.25
Grades B:		30-30.9	1.27
Below 25	1.15	31-31.9	1.29
25-25.9	1.17	32-32.9	1.31
26-26.9	1.19	33-33.9	1.33
27-27.9	1.21	34-34.9	1.35
28-28.9	1.23	35 and above	1.37

Fields classified as A and B are Spindletop, Goose Creek, Hull, Liberty, Sour Lake, West Columbia, Orange, Boling, Pierce Junction, Sugarland and Raccoon Bend. All other fields are Grades A only.

Crude Price Changes

OIL CITY—On Jan. 4 Joseph Seep Purchasing Agency advanced all grades of Pennsylvania crude 25 cents per barrel. Cabell, Corning, Somerset and Ragland crudes were unchanged. Last previous change on Pennsylvania grade crude was a 25 to 35 cent raise on Dec. 14, 1928.

New prices are: Pennsylvania grade in New York and National Transit lines (Bradford-Alleghany district), $4.10; Pennsylvania grade in National Transit and Southwest Pennsylvania lines (rest of Pennsylvania), $4.00; Pennsylvania grade in Eureka Pipelines (West Virginia), $3.90; Pennsylvania grade in Buckeye Pipelines (Macksburg, O. district), $3.85.

* * *

HOUSTON—On Jan. 7 Humble Oil & Refining Co. made its initial postings on Boggy Creek crude in east central Texas, prices in this field being the same as those in Mexia, Powell and other east central Texas crudes. The gravity and price schedule is the same as that of Prairie on Mid-Continent crude.

At the same time the Humble reduced Mirando, Tex. crude 20 cents per barrel, making new price 80 cents.

Joins New Marketing Company

TULSA, Jan. 5.—W. L. Crow, formerly manager of the brokerage department of the Henderson Co., has resigned to become affiliated with Ellis G. Slack in the formation of the Slack Petroleum Co., with offices in Tulsa. The firm will engage in carload marketing of petroleum products. Mr. Slack formerly operated in Denver but several months ago removed to Tulsa where he opened offices in the Hunt building. Mr. Crow was with the Henderson Co. approximately four years.

Crouse-Hinds Co., Syracuse, N. Y., has off the press an attractively colored eight-page leaflet on the safety of groundulets for electrical circuits. Proper grounding is explained and various types of groundulets are described and illustrated, including groundulets for filling stations and automobile lifts.

Flexible fixture hangers are described in bulletin 2125, showing various types of condulets for pendant fixtures.

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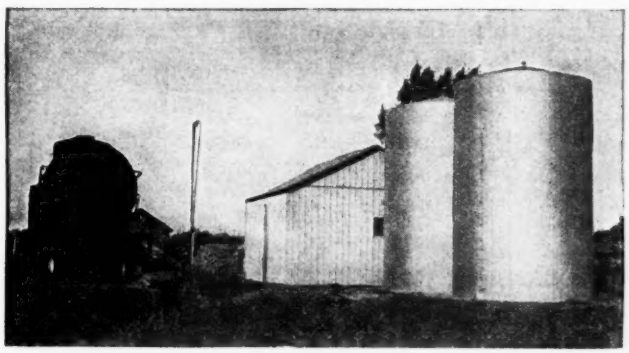

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Crude Oil Prices (in Effect Jan. 7)

(Crude prices for the whole year in OIL PRICE HANDBOOK published annually)

GULF COASTAL

Prices of The Texas Co.

Effective March 14, 1927

Grades A	$1.20	*Grades B	$1.15
‡Grades B (light crude):			
35-35.9	$1.37	38-38.9	$1.43
36-36.9	1.39	39-39.9	1.45
37-37.9	1.41	40 and above	1.47

*Grades B include all heavy crudes which do not meet tests for Grades A or for Gulf Coast light crude.

‡The Texas Co.'s gravity and price schedule on all below 35° is same as Humble's postings on Grades B.

ROCKY MOUNTAIN FIELDS

Prices of Ohio Oil Co., and Midwest Refining Co.

(Salt Creek prices effective July 26, 1928)

‡Salt Creek 29-29.9	$0.95
" " 30-30.9	1.02
" " 31-31.9	1.09
" " 32-32.9	1.16
" " 33-33.9	1.21
" " 34-34.9	1.26
" " 35-35.9	1.31
" " 36-36.9	1.36
" " 37 and above	1.41
Elk Basin	1.48
Grass Creek light	1.48
Big Muddy	1.33
Lance Creek	1.48
Rock Creek	1.33
Mule Creek	1.10
Rex Lake	1.10
‡Osage	1.48
‡Cat Creek, Mont.	1.48
Sunburst, Mont.	1.65
‡Hogback, N. Mex.	1.53
Artesia, N. Mex.	1.08

‡Posted by Midwest Refining Co. Midwest also buys Grass Creek light and Elk Basin.

CALIFORNIA

***Standard Oil Co. of California**

Gravity	Signal Hill Seal Beach Alamitos Heights Huntington Beach	Inglewood Torrance	Olinda-Brea Canon Richfield	Athens-Rosecrans Dominguez	Whittier La Habra	Coyote Hills	Santa Fe Springs	Newhall McKittrick	†Kern River	Midway Sunset Buena Vista & Elk Hills	Lost Hills	Coalinga	Wheeler Ridge	Montebello	Santa Maria	Ventura
14-14.9	$ .85	$ .85	$ .85	....	$ .85	$ .75	....	$ .75	$ .50	$ .75	$ .75	$ .75	$ .75	$ .85	$ .85	$ .85
15-15.9	.85	.85	.85	....	.85	.85	....	.75	.50	.75	.75	.75	.75	.85	.85	.85
16-16.9	.85	.85	.85	....	.85	.85	....	.75	.50	.75	.75	.75	.75	.85	.85	.85
17-17.9	.85	.85	.85	....	.85	.85	....	.75	.50	.75	.75	.75	.75	.85	.85	.85
18-18.9	.85	.85	.85	....	.85	.85	....	.75	.50	.75	.75	.75	.75	.85	.85	.85
19-19.9	.85	.85	.85	....	.85	.85	....	.75	.50	.75	.75	.75	.75	.85	.85	.85
20-20.9	.85	.85	.85	....	.85	.85	....	....	....	.77	.77	.77	.77	.86	.85	.85
21-21.9	.89	.89	.89	....	.88	.88	.89	....	....	.79	.79	.79	.79	.89	.86	.86
22-22.9	.93	.93	.93	....	.91	.91	.92	....	....	.82	.82	.82	.82	.92	.87	.80
23-23.9	.97	.97	.97	....	....	.94	.95	....	....	.86	.86	.85	.85	.95	.90	.97
24-24.9	1.01	1.01	1.01	1.01	....	.97	.98	....	....	.90	.90	.88	.88	.98	.93	.94
25-25.9	1.05	1.05	1.05	1.05	....	1.00	1.01	....	....	.95	.95	.91	.91	1.01	.95	.98
26-26.9	1.09	1.09	1.09	1.09	....	1.04	1.04	....	....	1.00	1.00	.94	.94	1.04	.97	1.02
27-27.9	1.13	1.13	1.13	1.13	....	1.08	1.07	....	....	1.05	1.05	.98	.97	1.07	....	1.06
28-28.9	1.17	1.17	1.17	1.17	....	1.12	1.10	....	....	1.10	1.10	1.02	....	1.10	....	1.10
29-29.9	1.21	....	1.21	1.21	....	1.16	1.15	....	....	1.16	1.16	1.06	....	1.13	....	1.14
30-30.9	1.25	....	1.25	1.25	....	1.20	1.20	....	....	1.22	1.22	1.10	....	1.16	....	1.18
31-31.9	1.30	....	....	1.30	....	....	1.25	....	....	1.28	1.28	1.14	....	....	....	1.23
32-32.9	1.35	....	....	1.35	....	....	1.30	....	....	1.34	1.34	1.18	....	....	....	1.28
33-33.9	....	....	....	1.41	....	....	1.35	....	....	1.40	1.40	1.22	....	....	....	....
34-34.9	....	....	....	1.47	....	....	1.40	....	....	....	1.46	1.26	....	....	....	....
35-35.9	....	....	....	1.53	....	....	1.45	....	....	....	....	1.30	....	....	....	....
36-36.9	....	....	....	1.59	....	....	1.50	....	....	....	....	....	....	....	....	....
37-37.9	....	....	....	1.65	....	....	1.55	....	....	....	....	....	....	....	....	....
38-38.9	....	....	....	1.71	....	....	1.60	....	....	....	....	....	....	....	....	....
39-39.9	....	....	....	1.77	....	....	1.65	....	....	....	....	....	....	....	....	....
40-40.9	....	....	....	1.83	....	....	....	....	....	....	....	....	....	....	....	....
41-41.9	....	....	....	1.89	....	....	....	....	....	....	....	....	....	....	....	....
42-42.9	....	....	....	1.95	....	....	....	....	....	....	....	....	....	....	....	....

*Santa Maria and Ventura postings are by Union Oil Co. Union Oil Co. posts same prices in all above fields as Standard except in Montebello and Wheeler Ridge. It also posts Elwood Terrace at same price as Rosecrans—Dominguez and also posts Santa Maria (Orcutt) and Ventura.

†Kern River down to 12° gravity is 50c; 11-11.9 is 45c.

REFINERS' and COMPOUNDERS' SUPPLIES

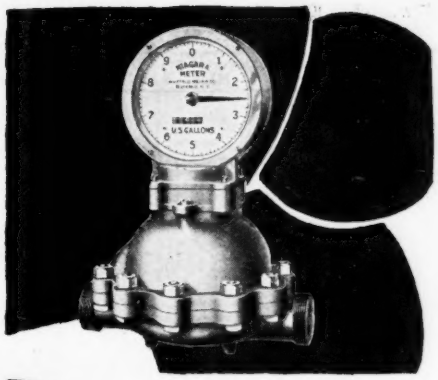
Following are average market prices for materials used by refiners and com ounders effective on the date shown.

Refiners' Supplies

	Jan. 7	Dec. 31
Soda Ash light 58% bags, cwt.	$1.32	$1.32
Silicate of Soda 60 deg. drums, cwt.	$1.55	$1.55
Silicate of Soda 40 deg. tank cars, cwt.	$0.60	$0.60
Silicate of Soda 40 deg. drums cwt.	$0.80	$0.80
Sal Soda wks	$0.90-1.00	$0.90-1.00
Caustic Soda 76% solid, cwt.	$2.90	$2.90
Sulfuric Acid 60 deg. tank cars, f.o.b. shipping point per ton	$11.00	$11.00
Oleum 20%, fuming sulfuric, tank cars, wks	$18.50	$18.50
Sulfur, flowers of cwt.	$3.10-4.00	$3.10-4.00
Liquid Chlorine, tank cars, wks lb.	3.00-4.50	3.00-4.50

Compounders' Supplies

	Jan. 7	Dec. 31
Vegetable Oils		
Linseed carloads, spot lb.	10.00	10.00
Tanks, spot	9.20	9.20
Soya Bean, Tanks, coast, lb.	9.75	9.75
Oleic Acid		
Distilled, tanks lb.	9.25	9.25
Distilled, bbls. lb.	10.00	10.00
Saponified, tanks lb.	9.75	9.75
Saponified, bbls. lb.	10.50	10.50
Lard Oils		
Prime Winter Strained lb.	15.50	15.50
Extra Winter Strained lb.	13.50	13.50
Extra lb.	13.25	13.25
Extra No. 1 lb.	12.75	12.75
No. 1 lb.	12.50	12.50
No. 2 lb.	12.25	12.25
Tallow oil lb.	11.75	11.75
Neatsfoot Oil		
Pure, bbls. lb.	15.00	15.00
Extra, bbls. lb.	13.00	13.00
No. 1 bbls. lb.	12.75	12.75
Cold Pressed lb.	18.75	18.75
Fish Oils		
Menhaden Oil		
Light Pressed gal.	70	64-65
Light Pressed, tank cars, N.Y. gal.	64	59-60
White bleached gal.	76	70-73
Yellow bleached gal.	73	67-70
Whale, extra winter bleached, gal.	84	82-84
Naval Stores		
Steam distilled turpentine, N. Y. gal.	61	57
Steam distilled turpentine, Savannah gal.	57	52
Gum turpentine, N. Y. gal.	64	62
Gum turpentine, f.o.b. cars Savannah gal.	58	58
Wood Rosin F, N. Y. bbl.	$8.20	$8.00
Wood Rosin F, Savn'h bbl.	$7.40	$7.20
Gum Rosin B, N. Y. bbl.	$8.90	$8.85
Gum Rosin B, f.o.b. cars Savannah bbl.	$8.15	$8.10
Rosin oil, pure gal.	62	62
Rosin oil, compounded gal.	51	51
Pine Tar		
Kiln burnt bbl.	$13.00-14.00	$13.00-14.00
Retort bbl.	$13.50-14.50	$13.50-14.50
Alcohol		
Denatured, Formula 5, in bbls., per gal.	55-62	55-62



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For nearly 50 years, The Freedom Oil Works Company has specialized in the refining and blending of 100% Pennsylvania Oils. In one way, that explains why jobbers the country over come to this concern for their requirements.

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600 Steam Refined
635 Steam Refined
650 Steam Refined

Freedom 300 Mineral Seal Oil made to Railroad Specifications.

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The Freedom Oil Works Company
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Refineries at Freedom and Coraopolis, Pennsylvania

FREEDOM

Transactions in Oil Shares on New York Stock Exchange

1927 High	1927 Low	1928 High	1928 Low	Listed Capital	Par Value	Stocks	Div. Rate	Last Paid	Transactions Week Ended Jan. 5 Sales	First	High	Low	Last	Change
37⅞	27⅝	43⅞	27⅛	(sh) 922,075	N.P.	Amerada Corp.	50cQ	Oct. 31, 28	27,900	38½	42⅝	38½	40¾	+ 3
82½	35½	85	51¼	(sh) 209,180	N.P.	American Republics Corp.	....	.....	5,700	63½	64¾	60¼	61⅝	— ⅛
50¼	35	53¾	37½	$56,000,000	$ 25	Associated Oil	50cQ	Dec. 31, 28	30	43¾	45	43¾	44½	+ ⅜
....	.....	63½	50	50,000,000	25	Atlantic Refining (New stock)	25cQ	Dec. 15, 28	135,000	64¾	68	63⅛	64	+ 1
119	115½	118¼	114½	20,000,000	100	do pfd	$1.75Q	Nov. 1, 28	23	116	116½	116	116½	0
35½	20¾	53	20	30,971,225	25	Barnsdall Corp. A	50cQ	Oct. 31, 28	180,000	40½	46⅞	40½	45⅞	+ 5½
32½	20½	51⅛	20	581,850	25	do B	50cQ	Oct. 31, 28	400	44	46	44	46	+ 6
18⅛	14	24½	12¼	946,518	N.P.	Beacon Oil	.....	.....	40,000	21⅞	24½	21½	23⅞	+ 2¼
32⅛	20	36	24	51,524,150	25	California Petroleum	25cQ	Jan. 1, 29	.....	.....	.....	.....	.....	.....
96⅝	65	94⅛	68	20,980,400	100	General Asphalt	.....	.....	9,700	74½	78	74	75¾	+ 1⅝
144⅞	107¼	141½	110⅛	6,662,200	100	do pfd	$1.25Q	Dec. 1, 28	200	117	117	114⅞	114⅝	+ ⅞
175⅜	60½	167	79	25,000,000	100	Houston Oil	.....	.....	35,700	98¾	107	98	100	+ 4½
32¾	17⅜	38⅝	21⅜	(sh) 659,000	N.P.	Independent Oil & Gas	37½cQ	Oct. 31, 28	207,000	35¼	35¼	33⅜	33⅜	— 1⅜
12½	7⅜	39⅝	9	$3,582,670	$ 10	Indian Refining	....	Dec. 15, 20	35,600	29½	33⅞	29⅜	30½	+ ⅞
12	7¼	37¼	8¼	4,550,110	10	do ctfs.	.....	.....	10,900	28⅜	31⅜	28	30	+ 2
112	99	185	40	2,296,400	100	do pfd new	$1.75Q	Jan. 2, 29	100	160	160	160	160	+19¾
37¾	20½	39½	27⅜	(sh) 3,992,234	N.P.	Lago Oil & Transport	75cQ	Nov. 1, 28	2,300	30½	33	30½	32	+ 1½
18⅛	10	19¾	9⅜	(sh) 1,187,003	N.P.	Louisiana Oil Refining	.....	.....	83,600	14⅜	17⅝	14⅛	17⅜	+ 3⅛
97	85¼	96	78	$4,000,000	$100	do pfd	$1.50Q	Nov. 15, 28	520	90¼	90¼	89⅝	90	— 1
22¾	12	25⅛	12⅛	(sh) 330,000	N.P.	Maracaibo Oil	....	.....	2,300	16½	17¼	16⅛	17	+ ⅛
58½	31	49¾	33	(sh) 2,316,851	N.P.	Marland Oil Co	....	Mar. 31, 27	145,900	41½	47⅛	41¼	45	+ 3⅞
320	200	360	250	$45,942,800	$100	Mexican Petroleum	$3Q	Oct. 20, 28	30	...	275	257	257	—41
....	....	....	....	12,000,000	100	do pfd	$2Q	Oct. 20, 28	.....	.....	.....	.....	.....	.....
9¼	3	7⅜	4⅜	(sh) 995,500	N.P.	Mexican Seaboard	....	Nov. 15, 24	174,800	63⅞	69⅜	62½	65	+ 2
39¾	25½	44½	25⅜	(sh) 1,857,461	N.P.	Mid-Continent	....	Aug. 1, 27	55,300	37½	39⅞	37½	38½	+ 2¼
105	97	117	103¼	$6,718,000	$100	do pfd	$1.75Q	Dec. 1, 28	500	120½	121	120⅜	121	+ ⅞
3¾	1¾	7⅜	2⅜	24,060,470	10	Middle States	....	July 1, 23	22,400	4½	5⅛	4¼	4⅞	+ ⅝
2¾	1¼	5⅞	1½	5,739,750	10	do ctfs	.....	.....	6,900	3¼	3½	3	3⅜	+ ⅛
1⅞	1	2¼	1	(sh) 3,500,000	N.P.	Pacific Oil	....	.....	16,800	⅞	1¼	1⅛	1¼	+ ⅛
65⅞	40½	55½	38¼	$50,000,000	$ 50	Pan American P. & T.	....	Oct. 20, 27	2,800	46⅛	50	46⅛	49½	+ 3½
66⅝	40¼	58⅛	37⅝	121,100,000	50	do B	....	Oct. 20, 27	44,800	48⅜	51⅞	47½	50	+ 2½
37⅞	16¾	28⅜	15½	(sh) 400,000	N.P.	Pan American Western B	....	Jan. 30, 27	500	17½	17½	17½	17½	+ ⅞
18⅛	8	21¾	11⅛	(sh) 199,370	N.P.	Panhandle P. & R.	....	.....	3,700	12¼	15¼	13¼	13⅜	+ 1⅜
83	54	106¼	70	$2,935,200	$100	do pfd	....	July 2, 23	100	80	80	80	80	+ 5
60¼	36¼	53⅛	35¼	(sh) 2,406,796	N.P.	Phillips Petroleum	‡37½cQ	Jan. 2, 29	33,700	44⅛	47	44	45⅜	+ 1¼
1⅛	½	5¼	½	$29,622,925	$ 25	Pierce Oil	....	.....	18,200	2½	2¾	2½	2¾	+ 7⅛
24	13½	50	16¼	15,000,000	100	do pfd	....	Feb. 1, 22	900	28½	32	28½	32	+ 3⅞
5⅛	2½	6⅝	3½	(sh) 2,500,000	N P.	Pierce Petroleum	....	.....	6,900	5¼	5½	5¼	5¼	0
....	....	....	....	$65,575,000	$ 25	Prairie Oil & Gas	....	Aug. 31, 27	.....	.....	.....	.....	.....	.....
33⅛	16¾	29⅞	16	$37,450,850	$ 50	Producers & Refiners	....	Sept. 15, 23	4,700	22⅞	25⅞	22⅞	24	+ 2
50	36⅛	49⅝	41	2,845,350	50	do pfd	....	May 1, 25	130	43	43	43	43	0
33⅛	25	31¼	19	75,952,250	25	Pure Oil Co.	25cQ	Dec. 1, 28	44,100	26⅞	28½	26¾	27⅛	+ ⅝
115½	111¾	119	108	13,000,000	100	do 8% pfd	$2Q	Jan. 2, 29	470	112	114⅝	112	113¾	+ 1⅞
28⅝	25⅜	56	23½	$43,764,450	$ 25	Richfield Oil	50cQ	Nov. 15, 28	67,200	46¼	49½	46¼	47⅜	+ 1⅜
54½	44¼	64	44⅜	(sh) 585,293	13.40	Royal Dutch N. Y. shares	$1.879	Aug. 3, 28	4,900	53¾	55¾	53½	55¾	+ 2½
47⅞	41⅜	57½	39⅜	(sh) 67,300	£2	Shell Transport & T.	$1.455	July 23, 28	.....	.....	.....	.....	.....	.....
31⅜	24⅜	39⅜	23¼	(sh) 10,000,000	N.P.	Shell Union Oil	35cQ	Dec. 31, 28	106,200	28	30¼	27¾	29	+ 1
26⅜	14¼	27¼	18½	$7,208,080	$ 10	Simms Petroleum	40c	Dec. 15, 28	11,400	23⅜	23⅜	23¼	23¼	+ ⅛
22⅜	15	46¾	17⅜	(sh) 4,503,031	N.P.	Sinclair Consolidated	.....	May 31, 24	450,400	41⅝	45	41½	42⅛	+ ⅛
104½	97	110	102½	$16,310,100	$100	do pfd	$2Q	Nov. 15, 28	300	109	109¾	109	109¾	+ ¾
37⅜	24⅛	42⅝	25	27,396,590	25	Skelly Oil Co.	50cQ	Dec. 15, 28	17,900	35⅛	37⅛	35	36⅝	+ 1½
60¾	50⅜	80	53	(sh) 13,016,434	N.P.	S. O. California	‡62½cQ	Dec. 15, 28	43,900	71⅜	73½	70⅛	72⅛	+ ⅝
41⅜	35⅛	59⅜	37¾	$610,195,375	$ 25	S. O. New Jersey	‡25cQ	Dec. 15, 28	173,400	54⅜	55	53¼	54⅛	0
34⅛	29¾	44½	28¾	431,973,275	25	S. O. New York	40cQ	Dec. 15, 28	419,200	44½	44½	42¾	43¼	— 1¼
34⅞	30	77	31⅜	(sh) 1,300,532	N.P.	Sun Oil	‡25cQ	Dec. 15, 28	1,100	64⅛	68	64	67½	+ 3½
101⅜	99	110	100	$5,000,000	$100	do pfd	$1.50Q	Dec. 1, 28	150	104	105	100	105	+ 1
6½	3⅛	14¼	2⅛	(sh) 1,186,078	N.P.	Superior Oil Corp	.....	Dec. 20, 20	67,900	9⅞	12	9¾	10⅞	+ 1⅛
58	45	74¾	50	$210,577,050	$ 25	The Texas Corp	75cQ	Jan. 1, 29	56,900	66⅛	68	66¼	66⅜	0
18⅞	12	26⅝	12⅛	8,380,340	10	Texas Pacific Coal & Oil	.....	Jan. 3, 28	40,000	18⅜	19⅝	17⅜	18⅛	+ ⅛
29½	19	41½	19⅝	(sh) 2,168,498	N.P.	Tide Water Oil Co.	20cQ	Dec. 31, 28	5,100	37⅛	37⅝	36½	36½	— ⅝
90½	85	100½	86¾	$20,705,200	$100	do 5½% pfd	$1.25Q	Nov. 15, 28	1,400	96	97	96	97	+ ⅛
19⅜	15¾	25	14¾	(sh) 4,824,766	N P.	Tide Water Associated	.....	Aug. 1, 27	56,600	20⅞	22	20⅞	21	+ ⅛
90¾	85	91¾	81⅞	$72,745,958	$100	do pfd	$1.50Q	Jan. 2, 29	2,600	90	90	89½	89¾	— ¼
10⅜	3¾	14½	6¾	(sh) 3,842,029	N.P.	Transcontinental Oil	.....	.....	71,400	12¼	13	11⅞	11¾	— ½
56⅛	39⅝	58	42¾	$40,841,100	$ 25	Union Oil of California	50cQ	Nov. 10, 28	7,400	51¼	52	50	51¼	+ ¾
127½	94	128½	110	31,061,200	100	Union Tank Car Co.	$1 25Q	Dec. 1, 28	700	122	122	122	122	— 2
34½	24⅛	44⅞	26	(sh) 357,197	N.P.	Warner Quinlan	50cQ	Jan. 2, 29	27,800	39¼	42⅞	38¾	40	+ 1
27½	20	38	20⅛	(sh) 490,000	N.P.	White Eagle Oil & Refining	50cQ	Oct 20, 28	15,400	35⅝	36½	35⅛	35¾	+ ⅛
....	....	22⅞	18⅛	(sh) 418,967	N.P.	Wilcox Oil & Gas	..	May 10, 28	2,700	..	22¼	20⅜	21	+ 2

*New High †New Low ††Ex-dividends ‡Also extras s-Stock Total Sales 3,036,430

Pittsburgh Stock Exchange

1927 High	1927 Low	1928 High	1928 Low	Par Value	Stocks	Transactions Week Ended Jan. 4 Sales	First	High	Low	Last	Change
....	....	4	2½	N.P.	Ark. Nat. Gas (new)	3,703	3⅝	3⅞	3⅝	3¾	0
....	....	7¼	6¾	N.P.	do pfd	2,234	7¾	8	7¾	8	+ ¼
98¾	80¼	130	90¾	100	Colombia Gas	.....	.....	.....	.....	.....	.....
107¼	100	124	107	100	do pfd	.....	.....	.....	.....	.....	.....
15	7⅛	10	6¾	10	Devonian Oil	40	7⅛	7¼	7	7¼	+ ¼
....	....	15	5	10	Dixie Gas & Util.	300	7½	7½	7½	7½	+ ½
....	....	95	75	100	do pfd	.....	.....	.....	.....	.....	.....
117¾	115	116	115	100	Duquesne Light pfd.	.....	.....	.....	.....	.....	.....
12¾	6	22	12	N.P.	Houston Gulf Gas	.....	.....	.....	.....	.....	.....
59¾	37¾	69	48⅝	$ 25	Lone Star Gas	1,302	67¼	69	66¾	68½	+ 1½
....	....	38	35	25	Petroleum Exploration	.....	.....	.....	.....	.....	.....
....	....	.75	.45	....	Phoenix Oil pfd	1,530	29	29½	29	29	0
3¾	3	4⅞	3	5	Pittsburgh Oil & Gas.	120	3	3	3	3	0
....	....	....	....	....	Plymouth	.....	.....	.....	.....	.....	.....
8	5¾	7¾	5½	10	Salt Creek Cons.	180	5¾	5⅞	5¾	5⅞	+ ⅛
26½	17	22	16½	10	Tidal Osage	250	15	15	15	15	0
43	33	40	30½	N.P.	Waverly Oil Wks. A	.....	.....	.....	.....	.....	.....
....	....	19	16	$ 25	Wiser Oil	109	15¼	15½	15¼	15½	0

*New high record †New low.

Pittsburgh Curb Market

1927 High	1927 Low	1928 High	1928 Low	Par Value	Stocks	Transactions Week Ended Jan. 4 Sales	First	High	Low	Last	Change
95	88	150¼	120	25	Gulf Oil	200	149¾	149¾	149¾	149¾	— ½
....	....	....	....	....	Duquesne Oil	1,500	.01	....	....	....	.....
....	....	115	115	....	Houston Gulf Gas pfd.	.....	.....	.....	.....	.....	.....
10¾	5½	9	4¼	25	Leonard Oil & Dev.	.....	.....	.....	.....	.....	.....
....	....	9⅛	9⅛	....	Pennkas Oil & Gas	.....	.....	.....	.....	.....	.....
....	....	....	....	....	Phoenix Oil	.....	.....	.....	.....	.....	.....
2¼	1¾	....	....	5	Pittsburgh Oil	.....	.....	.....	.....	.....	.....
31	19	30¼	16¾	5	Plymouth Oil	.....	.....	.....	.....	.....	.....
6	5	4¾	4	5	States Oil	.....	.....	.....	.....	.....	.....
3⅛	1½	4½	2¼	1	Texon Oil & Land	100	3⅝	3⅝	3⅝	3⅝	— ⅛
23¾	18	18	15	10	Tidal Osage Non-vgt.	.....	.....	.....	.....	.....	.....

New High †New Low x Ex Dividend

Yo-hum

and a darn good stretch

IF you've read all your Christmas and New Year greetings and you're all ready to tackle 1929's big problems, don't make any resolutions—what's the use? Just take a leaf from Old Man 1928's experience — and profit thereby.

The year 1928 added more and more good distributors of Penn-Empire Motor Oils—companies who made good with Penn-Empire and companies for which Penn-Empire made good.

1929 will witness still more boosters of Penn-Empire.

How about you?

PENN EMPIRE 100 PURE PENNSYLVANIA OIL

EMPIRE OIL WORKS, INC., OIL CITY, PA.

Refineries: **Reno, Pa. and Tidioute, Pa.**

PENN-EMPIRE

OILS and GREASES

When you buy Penn-Empire, You Get the Best

LOOKING AHEAD

Looking ahead in the oil business is more acutely important today than perhaps ever before.

Past earnings records for jobbing businesses—even over a period of years — have little, if any, bearing on what the future holds in store.

This is a period of readjustment. Past systems and methods are giving way to orderly, coordinated, complete unit operations.

Oil Jobbers seem to have the choice of three decisions:

(1) Sell a recognized refinery brand on an agency contract basis.

(2) Group together and establish through cooperation with refinery sources of supply their own cooperatively controlled national brands.

(3) Take advantage of the expansion programs of major interests and sell out while the opportunity offers.

Many factors require careful study and analysis, and the healthy willingness to study the problem from all angles is a wise precaution.

Correspondence solicited. Booklet "Financing and Liquidating" mailed on request.

L. V. NICHOLAS

Oil Finance—Organization —Investment

624 South Michigan Avenue
Chicago, Illinois

Standard Oil Stocks on New York Curb

1927 High	1927 Low	1928 High	1928 Low	Outstanding Capital	Par Value	Stocks	Div. Rate	Last Paid	Transactions Week Ended Jan. 8 Sales	First	High	Low	Last	Change
21⅝	17⅞	22⅜	14⅞	£ 4,126,460	£ 1	Anglo-American Oil	24.4c	June 6, 28	300	15¼	16⅜	15	15⅞	+ ⅜
21½	17⅝	20½	14⅜	.....	£ 1	do cts. non-voting	.....	.....	1,600	15⅝	15½	15	15⅛	— ⅜
3¾	¾	5	1¼	(sh) 500,000	N.P.	Atlantic Lobos	.....	.....	200	2½	2½	2¼	2½	0
6½	2½	9¾	3¼	$ 10,000,000	$ 50	do pfd	.....	.....	100	4½	4½	4½	4½	0
69	50	56	44½	1,000,000	25	Borne Scrymser	‡$1S.A.	Oct. 15, 28	50	46	46	46	46	— 1
60	45	76	58	10,000,000	50	Buckeye Pipe Line	$1Q	Dec. 15, 28	100	66½	67	66½	67	+ ¾
126	76½	161	117¼	3,000,000	25	Chesebrough Mfg	‡$1Q	Dec. 28, 28	400	144	144	142	142	0
22⅝	16¼	23	16	36,123,350	10	Continental Oil	.....	Dec. 15, 27	41,500	19¼	19⅞	19⅛	19¾	+ ⅛
137	89	114	67	1,500,000	50	Cumberland Pipe Line	$1Q	Dec. 15, 28	.....	.....	.....	.....	.....	.....
68½	47	88	64⅛	5,000,000	100	Eureka Pipe Line	$1Q	Nov. 1, 28	100	65½	65½	65½	65½	— 1½
13½	3½	13	4¼	16,000,000	100	Galena Signal Oil	.....	June 30, 25	700	6	6	6	6	+ ⅛
59¾	23	87¾	27	4,000,000	100	do new pfd	.....	June 30, 26	.....	.....	.....	.....	.....	.....
60⅛	35½	89¾	35	2,000,000	100	do old pfd	.....	June 30, 26	.....	.....	.....	.....	.....	.....
68½	54	114¾	59¼	73,685,700	25	Humble Oil & Refining	‡30cQ	Jan. 2, 29	13,800	101	105¼	99	99½	+ 1⅛
182	123¾	290½	176½	20,000,000	100	Illinois Pipe Line	$10S.A.	Dec. 15, 28	650	277¾	295	277¾	285	+ 7
64¾	37¾	104	56¾	(sh) 6,591,458	N.P.	Imperial of Canada	‡25cQ	Dec. 1, 28	17,800	97⅞	103½	97½	98¼	— ½
94½	61	91⅞	74⅞	$ 5,000,000	$ 50	Indiana Pipe Line	‡$1Q	Nov. 15, 28	400	83	85	84¾	85	+ 2
39	28¼	55	35	(sh) 7,123,544	N.P.	International Petroleum	25c	June 30, 28	64,100	50½	57½	49¾	54¼	+ 4
24	13¼	32⅜	19⅜	6,363,350	12.50	National Transit Co	25cQ	Dec. 15, 28	1,400	22	23	22	22¾	+ 1⅛
44½	31¾	75	38½	5,000,000	100	New York Transit	.....	July 15, 26	375	70	79	69¾	72	+ 2
100	70	69	56½	2,000,000	50	Northern Pipe Line	$2S.A.	Jan. 2, 29	200	62¼	62¼	62	62	+ 1
67⅛	52	83½	58	60,000,000	25	Ohio Oil Co	50cQ	Dec. 15, 28	7,000	72½	74⅜	72¼	72¾	+ ½
39	12	84	28	10,000,000	25	Penn Mex. Fuel	$75c	Dec. 16, 28	3,100	36	43⅞	36	39	+ ⅝
55½	45⅜	68	46	60,479,000	25	Prairie Oil & Gas	.....	Aug. 31, 27	.....	.....	.....	.....	.....	.....
190	132	278	172	81,000,000	100	Prairie Pipe Line	$3.50Q	Oct. 31, 28	2,700	259¾	280	259¾	272	+12¼
.....	.....	55¾	51	101,250,000	25	do new	.....	.....	17,400	53	56⅝	52¾	55	+ 1½
201½	175½	216	167	4,000,000	100	Solar Refining	$5S.A.	Dec. 20, 28	100	219½	219½	219½	219½	0
27¼	15½	35⅞	12	1,000,000	10	Southern Pipe Line	$2	Dec. 1, 27	200	15	15	15	15	0
41⅜	35	71⅞	36¾	20,000,000	25	South Penn Oil	‡50cQ	Dec. 31, 28	7,200	67¼	69⅞	66½	68⅞	+ 2
83	55½	100¾	70	3,500,000	100	South West Pa. Pipe Lines	$1Q	Oct. 1, 28	.....	.....	.....	.....	.....	.....
81½	64⅝	95⅞	70⅞	230,788,513	25	S. O. Indiana	‡62½cQ	Dec. 15, 28	2,780	89⅞	91⅝	89¼	89¼	— ⅝
20⅞	14⅝	27¾	15	8,000,000	25	S. O. Kansas	.....	June 16, 24	1,200	20¾	21⅞	20¾	21	— ⅜
130	111½	179¾	122¼	17,103,011	25	S. O. Kentucky	‡$1Q	Dec. 31, 28	1,400	161	164¼	161	162	— 1⅛
49½	40	54⅞	39⅞	4,601,100	25	S. O. Nebraska	‡62cQ	Dec. 20, 28	300	48⅞	48⅞	48½	48¾	+ 1½
87½	72	134	71	14,000,000	25	S. O. Ohio	62½cQ	Jan. 2, 29	1,500	119¾	119¾	118	118	— 1
122	117¼	125	116	7,000,000	100	do pfd	$1.75Q	Dec. 1, 28	150	118	119¾	116¼	119	— ½
21	14½	23½	16	861,466	25	Swan Finch Co	30c	June 30, 28	.....	.....	.....	.....	.....	.....
....	....	111	72	126,154,100	25	Vacuum Oil	‡75cQ	Dec. 20, 28	9,400	108¼	109⅞	106	106½	— 1

Independent Oils on New York Curb

1927 High	1927 Low	1928 High	1928 Low	Par Value	Stocks	Transactions Week Ended Jan. 8 Sales	First	High	Low	Last	Ch'ge
2¼	.55	1⅛	.53	$ 5	Amer. Con. Oilfields	9,600	60	64	60	64	+ 4
7½	2¾	9½	3⅛	N.P.	Amer. Maracaibo	18,000	8½	8¾	7⅛	8¼	— ¼
2⅜	1	4½	2¼	$ 10	Argo Oil	500	3⅝	3⅝	3⅜	3½	— ⅛
9¾	6¾	10¼	3⅛	10	Arkansas Nat. Gas	1,000	3½	3¾	3½	3¾	+ ¼
....	....	29⅜	3⅞	....	Barnsdall deb. war	64,000	15	22	15	20	+ 5⅜
40	20½	55	29⅛	N.P.	British American	.....	.....	.....	.....	.....	.....
28¼	15½	23⅞	3¾	25c	Carib Syndicate N	2,900	3⅞	4¼	3⅞	4	+ ⅛
58¾	40¼	90⅞	54	$ 20	Cities Service	54,300	88¼	95	88½	94¾	—12¼
95¾	87	103½	94½	100	do pfd	1,600	97½	98½	97⅜	98½	+ 1
8⅞	7⅜	9⅜	8⅞	10	do pfd. B	200	9⅛	9⅛	9⅛	9⅛	0
29¼	22½	....	28¼	10	do banker's shares	.....	.....	.....	.....	.....	.....
3⅛	1⅛	2¼	1	1	Colombia Syndicate	3,000	1¼	1¼	1⅛	1¼	— ⅛
....	....	17¾	9¾	....	Colon Oil	8,800	11¾	15	10½	14⅛	+ 3⅜
9¾	6⅜	8½	6¼	10	Consolidated Royal	4,100	8⅞	8⅞	8	8	— ⅞
14⅞	9½	17½	9½	N.P.	Creole Syndicate	63,600	10½	11¾	10½	11½	+ 1
3	.50	3¼	.76	N.P.	Crown Central	1,100	1⅝	1¾	1½	1⅝	+ ⅛
....	....	15	6¾	....	Crystal Oil	.....	.....	.....	.....	.....	.....
....	....	58	48	....	do pfd	.....	.....	.....	.....	.....	.....
12	4	33⅜	8½	N.P.	Darby Petroleum	10,100	24¾	25½	24½	25¼	+ 1⅜
11½	4	13½	7⅞	....	do trust ctfs	.....	.....	.....	.....	.....	.....
2½	.74	2⅞	1	N.P.	Derby Oil & Refining	100	2	2	2	2	— ¼
16¾	4	21⅛	7½	N.P.	do pfd	200	20⅞	20⅞	20⅞	20⅞	+ 2⅞
3¾	1	2	1	N.P.	Gibson Oil	.....	.....	.....	.....	.....	.....
2	.40	.53	.15	N.P.	Gilliland ctfs	.....	.....	.....	.....	.....	.....
118	86¼	165	101¾	$ 25	Gulf Oil Corp	16,400	148½	151½	147½	147½	— ½
2¼	.80	3⅜	1	10	Intercontinent Pet	8,400	2⅛	2⅜	2	2¼	+ ¼
2¼	1¼	3	1¼	N.P.	Kirby Petroleum	57,800	1⅝	3⅝	1⅝	2⅞	+ 1⅜
10⅞	5¼	9⅜	5⅛	N.P.	Leonard Oil & Dev	1,400	5⅛	5¼	5⅛	5¼	+ ⅛
27½	20	43⅜	20	N.P.	Lion Oil & Refg	800	33	33	32¼	33	+ ½
59⅜	37	69⅛	48⅛	$ 25	Lone Star Gas	200	67½	69⅜	67	69⅜	+ 2½
2⅞	.80	1⅞	.50	1	Magdalena Synd	2,800	64	64	57	60	+ 4
21½	20⅞	22⅛	22⅛	N.P.	Manhattan Oil	.....	.....	.....	.....	.....	.....
52	12	45	34	N.P.	Margay Oil	1,000	32⅛	38½	32⅛	36⅞	+ 4⅜
3	1½	40½	40½	$ 10	Mexican-Panuco	.....	.....	.....	.....	.....	.....
12⅛	5	8	2¾	N.P.	Mexico-Ohio Oil	500	4	4	4	4	0
1½	1	1¾	.76	$ 1	Mountain & Gulf	1,500	1⅜	1½	1¼	1⅜	+ ⅛
29¼	22¾	28⅝	19½	10	Mountain Producers	3,200	21	21⅞	20½	20⅝	0
5⅞	4⅜	5⅜	4¼	5	New Bradford	700	4⅞	5	4¾	5	— ½
6¼	4	5½	2¾	10	New England Fuel	.....	.....	.....	.....	.....	.....
16	9¼	11⅜	7½	1	New Mex. & Ariz	2,100	7½	7½	7½	7½	0
13⅞	9	15½	11½	25	New York Oil	.....	.....	.....	.....	.....	.....
....	....	40	39⅜	....	North Amer. Oil Cons.	.....	.....	.....	.....	.....	.....
12¾	9½	13¼	9	N.P.	North Cent. Texas	1,700	8⅞	9½	8½	8¾	— ½
9⅜	3¼	6	2¼	N.P.	Pandem	3,200	2¼	2⅜	2⅛	2⅜	+ ⅜
12⅜	7	15⅜	8½	N.P.	Panapec Oil	5,400	10¼	10¼	10	10	— ⅛
9	7⅜	20	10⅜	$ 25	Paragon Refg. B ctfs	.....	.....	.....	.....	.....	.....
.37	.25	9	4	N.P.	Peer Oil Corp	.....	.....	.....	.....	.....	.....
13½	5⅛	7¾	4⅞	10	Pennok Oil	2,600	6⅜	6⅝	6⅜	6¾	+ ⅛
....	....	5⅜	3⅛	5	Pittsburgh Oil & Gas	.....	.....	.....	.....	.....	.....
....	....	31⅜	26½	....	Plymouth Oil	2,500	28⅞	29¾	28⅜	29⅞	+ ¼
24⅜	7	18	8	25	Red Bank Oil	.....	.....	.....	.....	.....	.....
15½	3½	13	4½	N.P.	Reiter-Foster	3,600	7	7⅞	6¾	7⅞	+ 1⅝
28⅜	15	25½	22	$ 25	Richfield Oil pfd	200	24⅝	24⅞	24⅝	24⅞	+ ⅝
....	....	23	7½	....	do warrants	.....	.....	.....	.....	.....	.....
7	4½	12	4⅝	N.P	Ryan Consolidated	7,900	10¼	10⅜	8¾	8¾	— 1¼
8	5¼	7¼	5⅝	$ 10	Salt Creek Cons	1,000	5¾	5⅞	5½	5⅝	0
35½	27¼	35	23¼	10	Salt Creek Prod	10,100	26½	26¾	24¾	25⅛	— 1¾
7	1¼	3½	1	5	Savoy Oil	.....	.....	.....	.....	.....	.....
....	....	7⅞	5⅞	....	Shell Union Oil	.....	.....	.....	.....	.....	.....
....	....	4⅝	3	1	Texon Oil & Land	9,600	3⅛	3⅞	3⅛	3⅞	+ ⅛
26½	17	22⅞	13	10	Tidal Osage	300	14¾	14¾	14¾	14¾	+ ¼
23¾	15	21¼	13⅛	10	do non-voting	300	14	14	14	14	+ ½
92	63½	93¾	75	100	Transcontinental pfd	100	89	89	89	89	0
23¼	7	74¼	18	10	Venezuela-Mexico	100	73	73	73	73	— 1¼
7⅝	4¼	9½	4¾	5	Venezuelan Petrol	21,700	5⅝	6½	5⅝	6⅛	+ ½
8	4¾	8¼	4⅞	$ 1	Woodley Petroleum	800	6¾	6¾	6½	6½	0
6	1¾	8⅜	2⅛	25	Y Oil & Gas (new)	400	4⅜	4⅞	4⅜	4⅞	+ ⅜

•New High †New Low xEx Dividend

New York Curb Bonds

Week Ending Jan. 4

	High	Low	Last	Ch'ge
Beacon Oil 6s '36	115	110½	115	+4
Cities Serv. 5s '66	90¾	89⅝	90¼	+ ¼
Cities Serv. G 5½s '42	94	91¾	91¾	— ⅜
Cities Serv. G. P. 6s '43	98⅞	98	98	— ½
Cont. Oil 5¼s '37	96	94¾	96	+ ¾
Empire O & R 5½s '42	91½	91	91½	0
Galena Oil 7s '30	100⅝	100⅝	100⅝	+ ⅜
Gulf Oil 5s '37	101½	100⅝	100⅞	+ ⅜
Gulf Oil 5s '47	102	101⅛	101½	+ ½
Indep. Oil 6s '39	111⅞	109⅜	109⅞	— ⅛
Richfield Oil 6s '41	125	125	125	—1
Sun Oil 5½s '39	101¾	101	101¾	+1⅜

New York Bonds

Week Ending Jan. 4

	High	Low	Last	Ch'ge
Assoc. Oil gold 6s	102½	102½	102½	0
Atlantic Refg. deb. 5s	101¼	100¾	101	— ⅛
Barnsdall Corp. 6s	142⅛	130	140	+10¾
Barnsdall Corp. 6s ex-war.	99¾	99⅝	99¾	0
Cal. Pet. 5s	101	100½	100½	0
Cal. Pet. 5½s	103	102½	103	0
General Pet. 5s	101	100¾	100¾	0
Humble Oil & Refg. 5s	101	100	100	—1⅞
Humble Oil & Refg. 5½s	102¼	101⅝	101⅝	— ¼
Mid. Cont. Pet. 6½s	105¼	105	105	0
Pan Amer. P & T 7s	104½	104½	104½	0
Pan Amer. P & T 6s	106	105⅜	106	+ ¼
Pan Amer. P & T 6s	97⅛	95½	96	0
Phillips Pet. 5¼s	93	92¼	93	+1
Pure Oil 5½s	100¼	99¾	100¼	+ ¼
Shell Union Oil 5s	98¾	98	98½	+ ½
Sinclair Con. Oil 7s	103	102½	102½	0
Sinclair Con. Oil 6½s	101	100⅝	100⅝	+ ⅛
Sinclair Con. Oil 6s D	99¼	98	99⅛	0
Sinclair Con. Oil Crude 5½s	97⅜	97	97⅛	— ¼
Sinclair Pipeline	94⅛	93⅜	94	0
Skelly Oil 5½s	93½	93	93½	0
S. O. N. Y. 4½s	98	97	98	—1
S. O. N. J. 5½s	102½	102	102½	— ⅜
Union Oil of Calif. 6s A	109	108⅞	108⅞	— ⅛
Union Oil of Calif. 1st 5s A	101⅝	101⅝	101⅝	+ ⅛
Union Oil of Calif. 5s C	99½	99½	99½	— ½
White Eagle O & R 5½s	105⅞	105	105⅞	+ ⅝

Cleveland Stock Market

January 3	Par Value	Bid	Asked
Canfield Oil Co	$100	....	155
do pfd	100	101¼	....
Fred G. Clark	10	....	8
National Refining	25	36½	37
do pfd	100	135	....
Paragon Refining	25	22	23½
do pfd	N.P.	43	45
do ctfs. of deposit	....	....	21

Gasoline May Haul Commuters

CHICAGO, Jan. 3.—Considerable popular discussion and some press comment developed recently in Chicago when the Chicago, Burlington & Quincy railroad started experimenting with a gasoline-electric locomotive in suburban passenger service.

The experiment did not show the results hoped for. The locomotive failed to develop the power which the service requires. Nevertheless officials of the company say the experiment did not unsell them on the gasoline-electric as a potential power unit for suburban trains.

The C.B.&Q. already uses 57 power units in which gasoline is used for fuel. Of these, 45 are gasoline-electric locomotives and seven are straight gasoline rail cars.

Nearly all these cars are used in the country, on branch lines between small towns, where they can do the work of a train at considerable saving.

F. L. Johnson, assistant to the vice president of the C.B.&Q. says the gasoline-electric locomotive has proven itself more satisfactory in service than the gasoline truck with mechanical gear shift and power transmission. And, although it costs nearly twice as much as the conventional steam locomotive it replaces, it is an economical investment because its fuel and maintenance bills are smaller.

The Burlington's 50 odd gasoline locomotives range between 275 and 400 horsepower and consume approximately 160 gallons of gasoline a day apiece. The oil industry's interest in the experiment with these machines in suburban service is large because if they should be successful transporting suburbanites to and from their work in the city it would mean that a great many more of them would be made and put in service immediately.

In Chicago the question is particularly interesting because of the "smoke nuisance" campaign. The city government, newspapers and several civic organizations are hot in pursuit of the industries that make Chicago black with coal soot. A great many of the offenders are railroads, because a great many Chicago commuters still ride steam trains that scatter cinders all the way from the most remote suburb to the heart of the city, many times a day.

The Illinois Central railroad occupies a desirable position in popular esteem because it recently expended about $100,000,000 and spent more than two years electrifying its suburban tracks from Chicago south and southeast for 30 miles.

THE OIL INDUSTRY EXCHANGE

Positions Wanted

EXPERIENCED IN FOLLOWING POSITIONS with major oil company: Warehouse foreman, charge of truck and station salesmen, salesman, auditor and agent. Age 25, willing to go anywhere, record to show ability as a producer. Address Box 258.

MAN WITH TWELVE YEARS EXPERIENCE desires position as bulk station manager or manager of service stations. Can give best of references. Address Box 259.

Situations Open

GENERAL MANAGER WANTED

to assume entire charge of company's field operations, man thoroughly experienced in Appalachian fields. Must have had responsible charge of drilling, production and operation. Company is increasing its production from its present fee-owned proven properties. Compensation will be very attractive for the right man. Replies will be confidential. They must state age, experience in detail, education and training, and must give responsible references. Technical education useful but not indispensable.

Address Box 242

MEN—INTERESTED SOUTH AMERICAN WORK with large oil, mining companies who pay fare and expenses write for our warranted service offer. South American Service Bureau. 14,600 Alma, Detroit, Mich.

Miscellaneous

Advertisers having box numbers should be addressed in care of National Petroleum News, 1213 W. 3rd St., Cleveland, Ohio, unless otherwise specified.

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Professional

L. G. Huntley J. R. Wylie, Jr.
Shirley L. Mason

HUNTLEY & HUNTLEY
PETROLEUM GEOLOGISTS AND ENGINEERS
Frick Building PITTSBURGH, PA.

Business Opportunities

Wanted to contract for about 500,000 gallons of high quality gasoline for 1929.

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138 Barclay, N. E.
Grand Rapids, Mich.

A CO-OPERATIVE TULSA BUYING OFFICE
Your orders for petroleum products placed direct with responsible refiners
Small commission charge
Write or Wire for particulars
DALE W. MOORE
532-533 Mayo Bldg., Tulsa, Okla.
Telephones: 3-4177 and 3-4178
L. D. 136

Wanted to Buy

GOOD GOING OIL BUSINESS WANTED. Preferably one with five or six privately owned service stations. Address Box 260.

For Sale

BULK-SERVICE STATION FOR SALE 25,000 gallon storage. Good business, no price cutting. Reason for selling, other business. Address DeGraff Oil Products Co., DeGraff, Ohio.

Have You Any Used Equipment to Sell?

If you have, National Petroleum News can put you in touch with buyers. Look over your old equipment, jot down what you don't need and send in a little "For Sale" advertisement.

The OIL INDUSTRY EXCHANGE is read by a large part of the oil industry each week.

Many of these companies are looking for the very equipment you have to sell.

ADVERTISERS INDEX

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This Week's News

THE oil industry is intelligently trying to meet the big issues before it by turning to the idea of town meetings to get the sentiment of the mass of the industry on the questions involved.

Whether oil producers in Oklahoma will support the proposed bill calling for compulsory unit development of new oil pools depends largely upon the attitude of producers in the state, large and small, as reflected in a general mass meeting.

Oil marketers are going to hold what amounts to a town meeting in St. Louis, Feb. 11, to determine their sentiment toward the proposed code of oil marketing practices.

NATIONAL PETROLEUM NEWS is helping in this most important effort to crystallize the thought of the men in the industry on these major problems. It has discussed various angles of the code of marketing practices in several issues. It has published statements from leaders among oil producers on the question of state regulatory legislation. Its own staff writers are writing articles, reflecting the attitude of various classes of operators on these bills.

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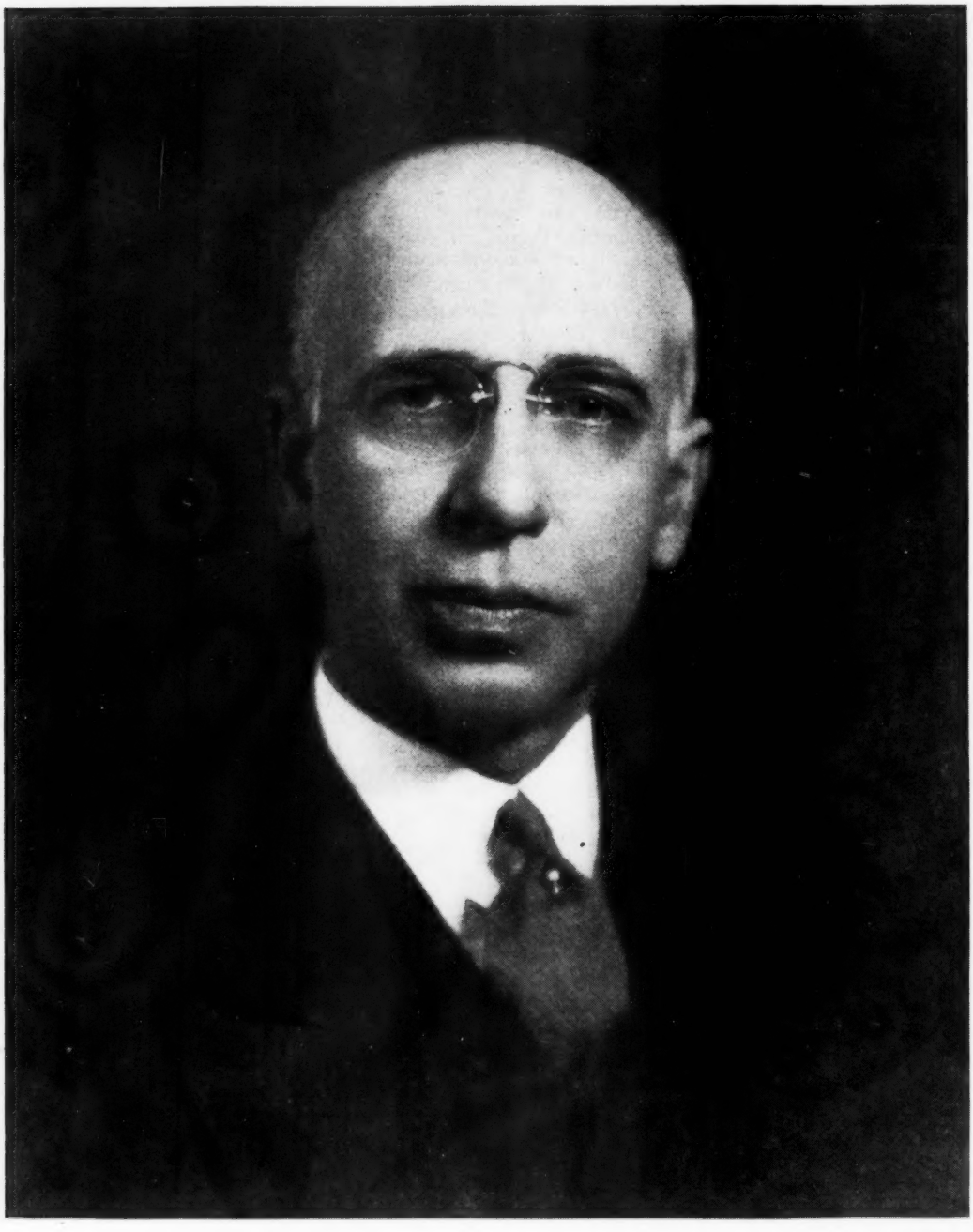

H. M. DAWES, president of the Pure Oil Co., one of three new divisional vice-presidents of the American Petroleum Institute elected at its meeting in Chicago last December. Mr. Dawes represents the marketing interests particularly